

TECHNOLOGY DEPT.

# Chilton's MOTOR AGE

PUBLIC LIBRARY  
NOV 18 1951  
DETROIT

NOVEMBER 1951



In This Issue:

## Maintenance on the Easamati

**Exclusive  
Hastings  
Diamond Knurl  
Pattern**



Crossed lines from the oil, assure positive lubrication at all times, providing better break-in of new or used pistons.

**FOR BETTER RING JOBS, BETTER BREAK-IN—  
FOR ACCURATE, LOW-COST PISTON EXPANDING**

Garages and repair shops across the country are producing better ring jobs and more satisfied customers, thanks to Hastings Micro-Knurling. This modern, extremely accurate method of piston expanding quickly and permanently ends piston slap and assures positive lubrication.

Micro-Knurling, an exclusive service of Hastings distributors, establishes an interrupted finish on the thrust surfaces of the piston—permitting it to pick up a greatly increased amount of oil—improving lubrication of pistons, rings and cylinder walls. Micro-Knurling gives a knurled surface over a greater portion of the piston and delivers an unusually durable finish. Thousands of field and laboratory installations prove Micro-Knurling the most

permanent method of piston expanding known.

The cost of Micro-Knurling is quite low, yet you make a nice profit on every job. Your customers are willing to pay for the additional work as it guarantees smoother, quieter running engines and increases the life of pistons, rings and cylinders.

*Ask your Hastings Jobber.*



HASTINGS SETS THE PACE  
WITH MICRO-KNURLING

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICRO-KNURLING

PISTON RINGS • SPARK PLUGS • OIL FILTERS • CASITE • DROU

**TINGS**

**MICRO-KNURLING**



# IT'S FORM-A-GASKET

*For Seal-Ability*

- Form-A-Gasket No. 1,  
Fast Drying Paste ... Hard Setting
- Form-A-Gasket No. 2,  
Non-Hardening Paste ... Stays Pliable
- Aviation Form-A-Gasket No. 3,  
Brushable ... Remains Tacky

*If It's Assembled  
With Form-A-Gasket,  
It's Leakproof!*



**PERMATEX COMPANY, INC., BROOKLYN 35, N. Y.**

## A large, detailed caricature of a man with a wide, toothy smile and wide eyes. He is wearing a crown adorned with jewels. The background is white with several five-pointed stars. In the bottom left corner, a group of smaller caricature figures are shown cheering and raising their hands. The word 'ER' is partially visible on the left, and 'of' is partially visible on the bottom right.

**Now 25 MILLION TELEVIEWERS**  
—every Tuesday night!

... June 1948—this show was telecast from 7 East Coast stations, reaching an audience of 1½ million. It is now telecast from 61 cities—reaching more than 25 million—every Tuesday night!—another “First” for Texaco Dealers.

**To Texaco Dealers,** the Texaco Star Theater and Milton Berle mean money in the bank. Yet TV is just one of the many ways Texaco Dealers profit by outstanding company support. National magazines carry not one but four major product campaigns to millions of car owners. Billboards deliver 30 million messages daily coast-to-coast, in the heavy driving seasons. The Metropolitan Opera broadcasts reach more millions. Plus direct mail, window displays and countless other dealer aids—all building healthy, year 'round business for Texaco Dealers.



*No wonder TEXACO DEALERS  
are such busy dealers!*

*Sky Chief* and **FIRE-CHIEF** GASOLINES  
HAVOLINE and TEXACO MOTOR OILS • MARFAK CHASSIS  
LUBRICATION • P T ANTI-FREEZE • REGISTERED REST ROOMS

# Chilton's MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

Reg. U. S. Pat. Off.

**Frank P. Tighe**  
Editor

**Charles M. Kenyon**  
Managing Editor

**J. K. Montgomery**  
Technical Editor

**Arthur H. Nellen, Jr.**  
Service Editor

**Marcus Ainsworth**  
Specifications Editor

**Howard Kohlbrenner**  
Art Director

**Leonard Westrate**  
Detroit News Editor

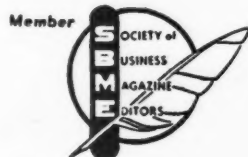
**Joseph Geschelin**  
Detroit Technical Editor

**G. H. Baker**  
Washington Editor

**K. Rannells**  
**R. M. Stroupe**  
Washington News Editors

**R. Raymond Kay**  
Pacific Coast Editor

**Paul Wooton**  
Washington Member of  
the Editorial Board



For THE AUTOMOTIVE SERVICE INDUSTRY

Vol. LXX, No. 12

November, 1951

## In This Issue . . .

News scene . . . . .	33
Ed Ronan—Friendly Philadelphian . . . . .	37
Maintenance on Packard Easomatic . . . . .by John K. Montgomery	38
Putting the Finger on Cooling System Profits .by Arthur H. Nellen, Jr.	40
The Antifreeze Tester Used by NBS . . . . .	42
1952 Packard Has Power Brakes . . . . .	43
Pop Gets a Car with a Big Build-Up . . . . .by Charles M. Kenyon	44
Olds & Caddy Valves . . . . .by John K. Montgomery	46
New Car Registrations . . . . .	48
Body Shop Hints . . . . .	49
Hot Tips on Hot Spray Painting . . . . .by Arthur H. Nellen, Jr.	50
Sixty Five Paint Jobs a Day . . . . .by C. E. Wright	52
Readers Clearing House . . . . .by John K. Montgomery	54
Floor Plan . . . . .	56
Shop Kinks . . . . .	58
New Products Show Window . . . . .	62
Service Suggestions from the Factory . . . . .by William H. Lutton	67
Engine Specifications . . . . .	68
Price, Weight & Body Table . . . . .	70
Sand Blasting Strips Clean . . . . .	72
Calendar of Coming Events . . . . .	156
Advertisers' Index . . . . .	164

Copyright 1951 by Chilton Company (Inc.)

**G. C. BUZBY**, President and Manager Automotive Division  
**E. H. MILLER**, ADV. MGR. **E. W. HEVNER**, CIR. MGR.

### REGIONAL MANAGERS

**RUSSELL W. CASE, JR.**, Philadelphia **J. A. LAANSMA**, Detroit  
**CURTIS F. MOSS**, Chicago **A. T. ARNOLD**, New York  
**H. M. WERTZ**, Chicago **R. J. BIRCH**, San Francisco  
**BEN E. BALL**, Cleveland **L. H. JACKSON**, Los Angeles

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone GRanite 4-5600, New York 17, N. Y.—100 E. 42nd St., Phone MUrray Hill 5-8600, Chicago 1, Ill.—Room 916, London Guarantee & Accident Bldg., Phone FRanklin 2-4243, Detroit 2, Mich.—1015 Stephenson Bldg., Phone TRinity 5-2090, Cleveland 14, Ohio—1030 National City Bank Building, Phone CHerry 4188, Washington 4, D. C.—1091 National Press Bldg., Phone STerling 1844, 1845, 1846, San Francisco 4, Cal.—300 Montgomery St., Phone DOuglas 2-4393, Los Angeles 5, Cal.—3156 Wilshire Blvd., Phone DUakirk 7-2119. Member of Audit Bureau of Circulation.

MOTOR AGE, Vol. LXX, No. 12. Published monthly by Chilton Co., Chestnut & 56th St., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries \$3.00 per year. Canadian \$5.00; foreign \$7.00 per year; single copies, 40 cents.

One of the Publications Owned by

① CHILTON COMPANY (INC.) ①

### Executive Offices

Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

Officers and Directors

**Jos. S. HILDRETH**, President

Vice-Presidents

**G. C. BUZBY** **HARRY V. DUFFY** **P. M. FAHRENDORF**  
**EVERIT B. TERHUNE**

**WILLIAM H. VALLAR**, Treasurer

**JOHN BLAIR MOFFETT**, Secretary

**GEORGE T. HOOK**  
**TOM C. CAMPBELL**

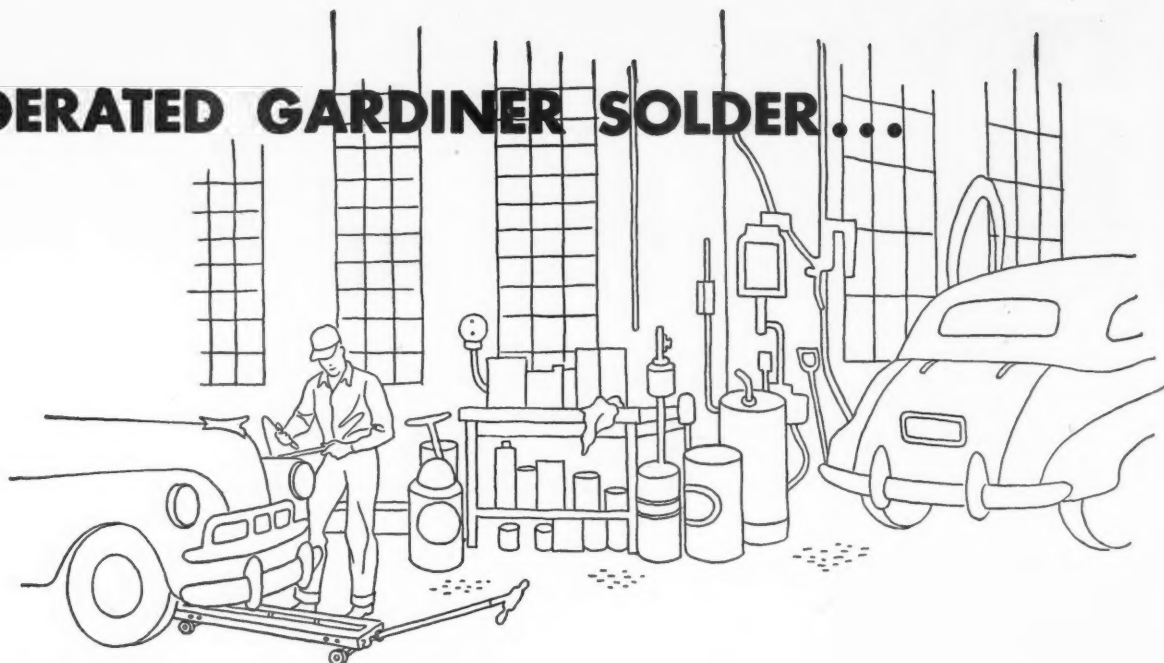
**MAURICE E. COX**  
**FRANK P. TIGHE**

**L. V. ROWLANDS**

**GEORGE MAISWINKLE**, Asst. Treas.



# FEDERATED GARDINER SOLDER...



## ...MAKES YOUR JOB EASIER

... because the flux is right in the solder. There are no messy acids or fluxes to bother with. All you need to produce a firm and lasting bond is a torch or an iron ... and Federated Gardiner brand Acid Core Solder.

Choose from the many commercial compositions and wire sizes available. You'll find these precise alloys of tin and lead unequalled for consistency, and perfectly suited for joining copper, brass, steel and other solderable materials.

Look for Gardiner brand Acid Core Solder in its familiar blue package. Comes wound on strong metal spools for convenient tool-kit, mandrel or routine use in 1-lb. and 5-lb. quantities. Listed by Underwriters' Laboratories, Inc.



## *Federated Metals Division*



AMERICAN SMELTING AND REFINING COMPANY • 123RD STREET AND INDIANAPOLIS BLVD. • WHITING, INDIANA

# STOP OIL?

## No Not Completely!

A set of rings that stops *all* oil consumption usually is drying up the cylinder wall, and excessive wear will result sooner or later.

## MOOG PISTON RINGS

# CONTROL OIL!

A certain amount of oil is needed to seal the top rings against blow-by. Mechanics should insist on rings that *control* oil, which will mean *minimum oil consumption with maximum Full Power.*

**A South Dakota garage man with thirty years experience tells what he thinks about Moog Rings:**

"I have used practically every brand of popular piston rings. To sum it up, I actually believe that with the speed that the present day car is driven, Moog Rings have solved one of the problems we mechanics are faced with today, i.e., to properly lubricate the cylinder wall with the least consumption of oil. As stated, I am expressing my experience on cars in the past and the result of a good product now."

**You don't want to stop oil consumption . . . you want to control oil consumption.**

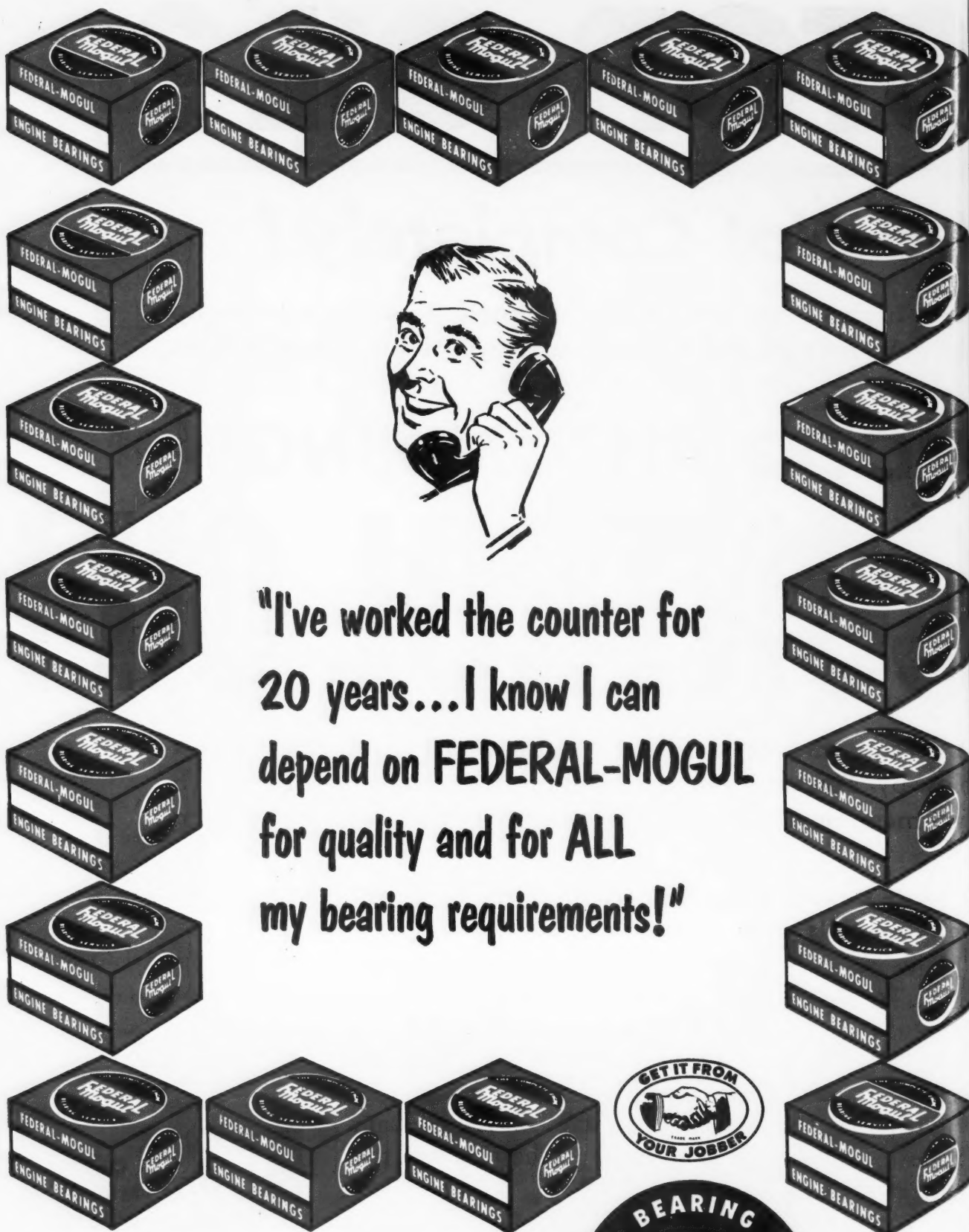
*That's why MOOG Piston Rings are America's Fastest Growing Ring Line.*

**MOOG PISTON RING CO. ST. LOUIS 14, MO.**

Division: MOOG INDUSTRIES, INC.



© 1951 M.I.I.



"I've worked the counter for  
20 years...I know I can  
depend on **FEDERAL-MOGUL**  
for quality and for **ALL**  
my bearing requirements!"

**FEDERAL-MOGUL SERVICE, DETROIT 13, MICH.**

(Division of Federal-Mogul Corporation)

Engine Bearings (Main, Connecting Rod and Camshaft) •  
Bushings • Connecting Rod Service—Reconditioned Con-  
necting Rods, Rebabbitted Connecting Rods • Connecting  
Rod Bolts and Nuts • V-Seam Piston Pin Bushings •  
Shims and Shim Stock







**NOW...**

## **A COMPLETE LINE OF DELCO-REMY OIL-FILLED COILS FOR SERVICE!**

After 10 years of successful experience in the manufacture of oil-filled, hermetically sealed ignition coils for original equipment Delco-Remy now presents a complete line for service.

Built to fit every Delco-Remy application, old or new, these service coils incorporate a host of time-tested engineering features . . . spring-loaded gaskets and special neoprene nipples for permanent sealing against moisture . . . steel primary terminals and anchored leads for greater strength and durability . . . balanced windings for better performance . . . and many others.

Delco-Remy oil-filled coils, both standard and heavy-duty, are available through United Motors Service distributors in both 6- and 12-volt models. Coils with high-ratio windings can be supplied where required. Special service packages are available for older applications.

**Delco-Remy**  
DIVISION, GENERAL MOTORS CORPORATION  
ANDERSON, INDIANA



DELCO-REMY—A UNITED MOTORS LINE  
Service Parts and Delco Batteries  
Available Everywhere Through  
UNITED MOTORS DISTRIBUTORS

**DELCO-REMY • WHEREVER WHEELS TURN OR PROPELLERS SPIN**

**Worried  
about the effects  
of BLOCK  
DISTORTION?**



## **Pedrick will get you off the hook!**

Block distortion will be with us always—due in large measure to higher compressions and higher operating temperatures. Whatever its causes, it can be licked—and completely—by installation of the proper Pedrick Engineered Sets, with the expert help you get from your Pedrick jobber.

Pedrick Piston Rings are *conformable*—form an amazingly snug

fit in distorted or worn cylinders. Power and lubrication are kept where they belong. Give blow-by the go-by—prevent needless oil waste, get new engine compression—by installing the Pedrick Engineered Set specifically designed for the job, and guaranteed to do it.

Pedrick specialization in piston rings during the past 31 years has

paid off in millions of satisfactory money- and worry-saving installations. Have your Pedrick jobber specify and supply the correct Pedrick Engineered Set and be sure of a perfect, long-lasting job!

• • •

WILKENING MANUFACTURING CO.,  
Philadelphia 42, Pa. In Canada:  
Wilkening Manufacturing Co.  
(Canada) Ltd., Toronto.

**Pedrick**<sup>®</sup>

**"HEAT-SHAPED"**

**PISTON RINGS**

FOR 31 YEARS, SUPPLIER OF PISTON RINGS TO  
LEADING VEHICLE AND ENGINE MANUFACTURERS



you'll  
step-up your tune-up sales



with this  
**MERCHANDISING  
RACK!**

**INDOOR-OUTDOOR DISPLAY**

Fits between pumps or on the island. Stands 24½" high and 14½" wide. Holds MOTOR RYTHM and other WHIZ products on both sides—a colorful, helpful, sales-getting bonus!

it's yours Free of extra charge  
in the New

**MOTOR RYTHM  
BONUS DEAL!**



• You can solve the tough problem of display space, and you can put your fast-moving, high-profit chemical products out where customers can see them! That's how the new MOTOR RYTHM merchandiser will help your sales—outdoors on the island, or indoors. Use it for MOTOR RYTHM and for other WHIZ products, too! You'll get more sales and more profits!

MOTOR RYTHM means top tune-up action, too. The United States Testing Co., Inc.\* tested MOTOR RYTHM and rated it "Superior" to six other leading brands. (\*Report No. P-39556, July 14, 1950)

Ask your jobber for the WHIZ MOTOR RYTHM deal. If he cannot supply MOTOR RYTHM, ask him to stock it for you.

**WHIZ MOTOR RYTHM DEAL NO. 51-A**

	Dealer Cost	Retail Value
YOU BUY: 2 cases MOTOR RYTHM®....	\$24.48	\$40.80
BONUS: WIRE DISPLAY RACK.....	No Charge	
YOUR SPECIAL DEALER PRICE.....	Only \$24.48	
(Plus 18¢ case Federal Excise Tax)		
(*or 1 case of MOTOR RYTHM and 1 case of ZORBIT)		



**R. M. HOLLINGSHEAD CORPORATION**  
LEADER IN MAINTENANCE CHEMICALS

Camden 2, N. J.

Warehouses: Chicago, Dallas, San Francisco • Canadian Offices: Toronto







November is **MōPār** Winterizing and Engine Tune-up Month . . .

## Assure Customer Satisfaction with **MōPār** WINTERIZING & ENGINE TUNE-UP PRODUCTS

**COLD-WEATHER SECURITY!** When you winterize Plymouth, Dodge, De Soto and Chrysler cars and Dodge "Job-Rated" trucks with MoPAR products, your customers are sure of dependable protection against cold weather! Recommend and install MoPAR batteries, fan belts, radiator and heater hose. They're *genuine Chrysler Corporation parts*. Use MoPAR cooling system cleaner, rust-resistor and antifreezes, too!

**TOP PERFORMANCE!** When you tune up engines of Plymouth, Dodge, De Soto and Chrysler cars and Dodge "Job-Rated" trucks and make necessary replacements with MoPAR parts, customers are sure of top performance. Always replace condensers, spark plugs, distributor points and other parts with MoPAR parts. *Factory-engineered, factory-inspected and supplied by Chrysler Motors Parts Corporation!*

MoPAR winterizing and engine tune-up products are available from Plymouth, Dodge, De Soto and Chrysler dealers everywhere.

**CHRYSLER MOTORS PARTS CORPORATION, DETROIT, MICHIGAN**



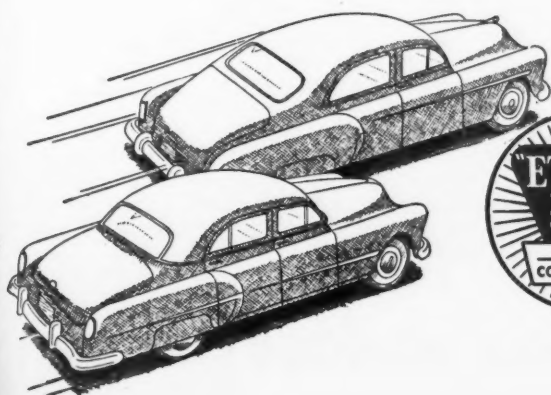


There's a big difference between a

# duck ...and a... buck

—and there is a powerful difference, too,  
between performance and “ETHYL” performance!

TRADE-MARK



Yes, there's a powerful difference between the performance of an engine using just gasoline and one using “Ethyl” gasoline. When you set the timing to take full advantage of “Ethyl” gasoline's higher antiknock quality, your customer gets “Ethyl” performance—more power, quicker starting, more mileage. And you get happier, more satisfied customers.

ETHYL CORPORATION, New York 17, New York

Other products sold under the “Ethyl” trade-mark: salt cake...ethylene dichloride...sodium (metallic)...chlorine (liquid)...oil soluble dye...benzene hexachloride (technical)

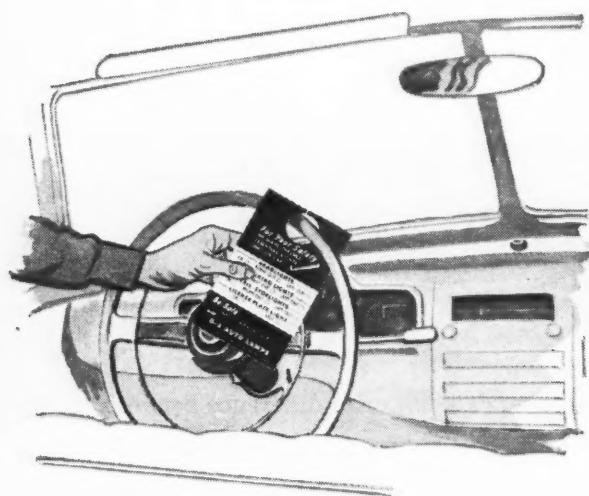
# Sell more lamps at Winter-izing time *with this 2 minute, 20 second check-up!*



**1. Take 2 minutes** to inspect all the lamps on each car left for Winter servicing. Headlamps, tail lamps, dash and trunk lamps. Actual tests prove that 1 car out of 3 needs at least one lamp replacement. And every General Electric lamp sale means big profits for you!



**2. Take 15 seconds** to list the lamps your customer needs. Use the handy, General Electric "snap-on" memo card. There's room to recommend other items too... new tires, plugs, battery. (Get FREE "snap-on" cards and window banner from your G-E lamp supplier.)



**3. Give yourself 5 seconds** to attach the "snap-on" memo card to the car's steering wheel. When your customer picks up his car, he's sure to see your sales message and be reminded to buy his needs from you. He'll appreciate this extra safety service.



**4. Result:** Every Winter-izing job creates lamp and TBA sales! The 2 minute, 20 second lamp check-up plus the G-E memo card is a sure-fire sales combination. So, get your free memo cards now. And order plenty of G-E lamps. Call your supplier today.

**Remember, G-E "All-Glass" Headlamps DO NOT GROW DIM!**

GENERAL  ELECTRIC



Tell your customers—

# HARRISON THERMOSTATS

are vital to  
the overall efficiency  
of the engine  
cooling system



HARRISON THERMOSTATS  
A UNITED MOTORS LINE  
Available Everywhere Through  
UNITED MOTORS DISTRIBUTORS

For long engine life, automatic control of engine temperature is absolutely necessary, summer and winter.

It is the function of a thermostat to effect such control.

How successfully Harrison thermostats have performed this function over the years is attested by the fact that they are now standard equipment on more cars and trucks than any other make—and that they have become a leading shelf item for dealers.

The demand for Harrison thermostats is continuous... Harrison thermostats are available through wholesalers who in turn are served by 20 United Motors Service zone warehouses strategically located in all parts of the United States.

For complete information, call your nearest United Motors distributor.

## HARRISON

HARRISON RADIATOR DIVISION  
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

# quick switch of rams

is possible ONLY with

**Porto-Power**



IN 30 SECONDS you can make an *on-the-job* switch to any one of these ESSENTIAL hydraulic rams and spreaders for quickest job performance! One low-cost pump, one low-cost hose serves 'em all!

## Only Porto-Power . . . Only Blackhawk Gives You All This

- ☐ A full-range of hydraulic rams in essential sizes and capacities!
- ☐ The ability to PULL with FULL POWER!
- ☐ Easier handling . . . a single hose with a revolving coupler and All-directional rams!
- ☐ Interchangeability of rams . . . one low-cost pump and one low-cost hose serve a whole range of rams.
- ☐ Spreaders with built-in hydraulic rams . . . for greater compactness, faster setups
- ☐ The only *complete* line of body-work attachments.
- ☐ Exclusive, specialized attachments for shop service *other* than body work!
- ☐ Compact, electrically-driven pump for less manual effort, greater speed.
- ☐ A wide choice of balanced assortments . . . to match every purse and purpose.



.. another reason why Porto-Power owners cut reconditioning costs . . . offer the best bids . . . make bigger profits

Only "Porto-Power" gives you the right size and style of hydraulic ram or spreader-ram for *each type of body damage and body style!* It's the secret to why you make MORE PROFIT with "Porto-Power". To cut costs — body men themselves demanded and helped us design this complete range of *specialized* rams and spreader-rams. Blackhawk *saves* big money for you, too — thanks to the patented "Spee-D-Coupler" which makes possible this quick switch of rams — all served by one pump and hose.

See your jobber for "Porto-Power".

# BLACKHAWK

"Porto-Power" is the exclusive (trade name registered) product of Blackhawk Mfg. Co., Milwaukee 1, Wisconsin.

At a time like this...



your customers need

## BALANCED BRAKES



*Only* **Grey-Rock** *makes*  
BALANCED BRAKSET LININGS



GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings  
Fan Belts • Radiator Hose • Packings • Mechanical Rubber Products • Rubber Covered Equipment  
Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls



Brakes *must* be ready for any emergency! And dependable brake action demands balanced linings!

Why? Different shoes, even in the same brake, do different work, need different kinds of linings. Grey-Rock gives you balanced combinations to provide smoother, *safer* stops . . . with equal wear on all shoes, hence greater mileage.

In addition, Grey-Rock Balanced Linings eliminate dive, grab, hard pedal, and other brake troubles. For better and more profitable brake jobs, order Grey-Rock Balanced Braksets from your jobber. Ask him, too, about Grey-Rock's business-building promotional plans.

Consistently advertised in  
**POST** and *Country Gentleman*





# NEW BATTERIES

## Willard

### Heavy Duty D.E. Luxe

THE MOST POWERFUL BATTERIES AND THE BIGGEST  
VALUES YOU CAN OFFER AT POPULAR PRICES TODAY!

UP TO **56%**  
MORE STARTING  
POWER AT ZERO!

NEW SEALING  
COMPOUND  
—Stands more heat,  
Stands more cold!



NEW CONTAINER  
—STRENGTH  
where strength  
is needed most!

#### GROUP 1

100 Ampere Hour Capacity  
Fits the following cars—

Chevrolet	Olds ('49-'50
Crosley	—6 cyl.)
Dodge	Plymouth
Kaiser	Studebaker
Nash	Willys

## THERE'S A SIZE FOR ALL



#### GROUP 2

115 Ampere Hour Capacity  
Fits the following cars—

Cadillac  
Chrysler  
DeSoto  
Olds ('49-'50 8 cyl.)



#### GROUP 2L

115 Ampere Hour Capacity  
Fits the following cars—

Ford (1947-50)  
Hudson  
Mercury (1947-50)

For complete list of cars and trucks  
WILLARD STORAGE BATTERY COMPANY

# *With* NEW POWER



## NEW PROOF



A Willard Heavy Duty DeLuxe (Group 1 size) was picked at random from the shipping platform of the main plant of Willard in Cleveland and literally "punished to death" before an audience of 95 responsible witnesses. It cranked a car continuously for 20 minutes and 22 seconds! Then, after only two

minutes of rest, it cranked the same car for one minute and 38 seconds. Another two-minute rest was followed by one minute and 30 seconds of cranking. Here was a grand total of 23 minutes and 30 seconds of cranking—from an original equipment size Willard that sells at popular prices!

## CARS AND MOST TRUCKS



### GROUP 2E

110 Ampere Hour Capacity  
Fits the following cars—  
Buick  
Olds (1938-48—  
6 and 8 cyl.)  
Packard  
Pontiac



### GROUP 2F

115 Ampere Hour Capacity  
Fits the following cars—  
Ford (1940-46)  
Hudson (1948-49)  
Lincoln  
Mercury (1940-46)

these batteries fit... consult your Distributor

Cleveland • Los Angeles • Dallas • Memphis • Portland • Toronto



A CARTOON FROM THE SATURDAY EVENING POST.

## "Very cold out there?"

Cold weather is coming, all right. And, for the operator with a reputation for handling dependable lines, that means increased TBA sales.

No doubt about it, winter customers want brands they can trust, products they can rely on. That's why winter TBA business is so brisk for the dealers who handle and feature the nationally advertised, Post-advertised lines.

When you recommend Post-advertised brands, you assure customer satisfaction . . . and make a fast sale. Because the Post carries more automotive advertising to more people than any other magazine in the world—it's no wonder Post lines are your fastest-selling lines!



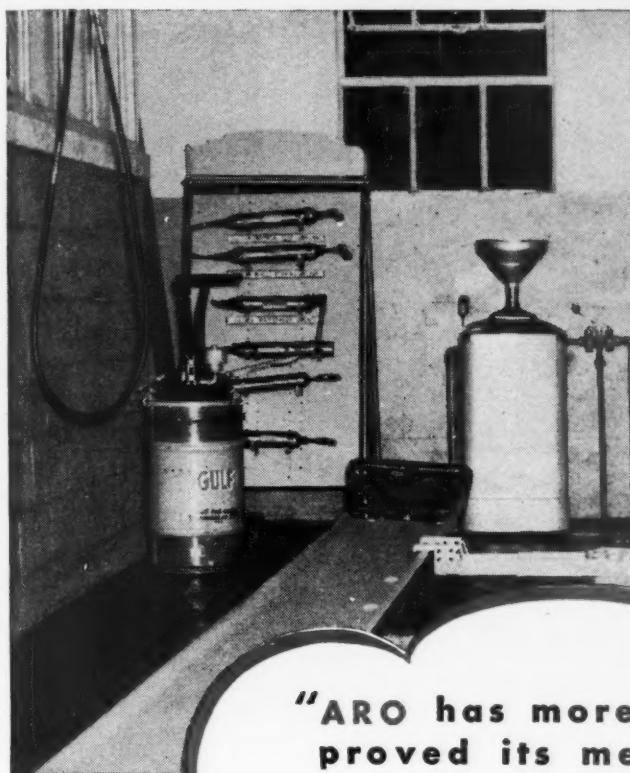
# -gets to the heart of America



# 15 Year User

STRONGLY RECOMMENDS

# ARO *The Leader*



**"ARO has more than  
proved its merit,"**

says O. J. Andre, manager of Andre's  
Gulf Service, Metairie Ridge, La.

"The ARO Duplex Lubricator shown here has been in continual use since 1936," says Mr. Andre, whose station pumps better than 30,000 gallons of gas per month. "With such service from Aro Equipment, I strongly recommend Aro to anyone interested in good greasing equipment."

For biggest or smallest requirements... see your Aro Jobber.

The Aro Equipment Corporation, Bryan, Ohio  
Aro Equipment of Canada, Ltd., Toronto, Ont.

# ARO

## LUBE EQUIPMENT

Also ... GREASE FITTINGS ... AIR TOOLS ... HYDRAULIC  
EQUIPMENT ... AIRCRAFT PRODUCTS



NO GIMMICKS  
NO COUPONS  
NO POINTS  
TO SAVE



A REAL  
PROFIT  
MAKER

Never before a deal like this...

# NEW WIRES FOR OLD!

## EIGHT FAST-SELLING IGNITION SETS

One	No. 1003
Three	No. 1007
One	No. 1009
One	No. 1012
One	No. 1016
One	No. 1018

## PROFIT MARK-UP OF OVER 84%

Your cost	\$12.37
Your selling price	\$22.80
Your profit	\$10.43

## SALES-MAKING ADVERTISING

- An eye-catching, sales-making window poster!
- A reprint of MOTOR AGE article "Neglected Wires Cause Fires!"
- 12 dramatic postcards for mailing to motorists!

## A Bonus of NEW WIRES for OLD

When you sell a Crescent Wiry Joe Ignition Set, put the old wires—the ones you replace—in the empty carton. When you have eight old sets, exchange them with your jobber for TWO BRAND NEW CRESCENT WIRY JOE SETS OF YOUR CHOICE—absolutely without charge!

**ACT NOW!** The sooner you get in on this BIG deal, the more profit you'll make. See your Crescent Wiry Joe jobber today!



THE CRESCENT COMPANY, INC., Pawtucket, R. I.

*Check the wire and cable on every car!*



# FIRST WITH THE WORLD



First with the  
Flagships



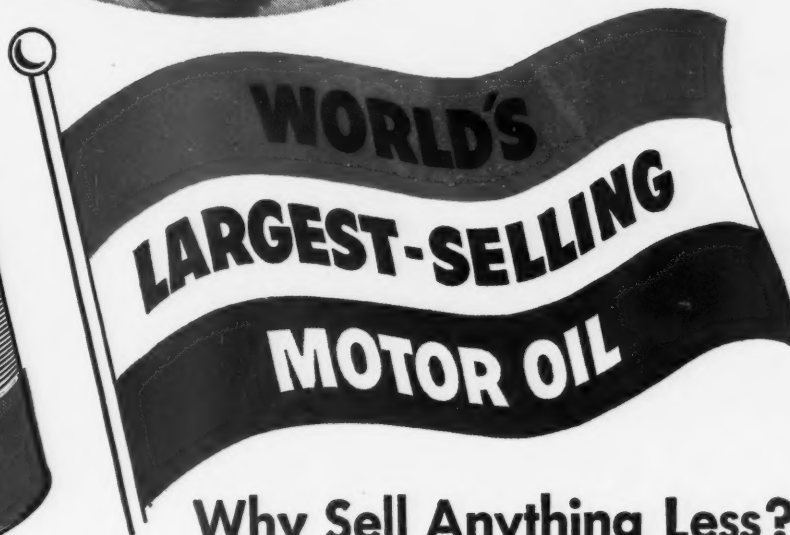
First with the  
World's Cars



Flies with the  
Clippers



Rides with the  
Record-Busters



## Why Sell Anything Less?



**W**IDE consumer acceptance is only one of the big benefits you get selling famous-quality Mobiloil.

Socony-Vacuum also offers a complete program—finest of its kind—for

training your men. They not only learn *correct lubrication*—but find out how to inspect a car and how to feed more business to your other service departments. Learn the full facts now!

SOCONY-VACUUM OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.





*Hal Miller*

GENERAL MANAGER

WOMWELL AUTOMOTIVE PARTS CO., INC.

240 CLARK STREET

LEXINGTON, KENTUCKY

"SOUND money-making propositions don't come along very often, but one came our way about two years ago that I'm still happy about. The offer was to handle the Auto-Lite Battery line," recalls Hal Miller of Lexington, Ky. "Today the Auto-Lite Battery operation is one of the most profitable lines we handle. A genuine dealer and consumer

demand has been built for us by the national radio, television, magazine and newspaper advertising done by Auto-Lite," continues Mr. Miller.

"Our organization is especially happy over the great success of the premium-profit Auto-Lite 'Sta-ful' Battery and the preference for it here in our territory."



# AUTO-LITE BATTERIES



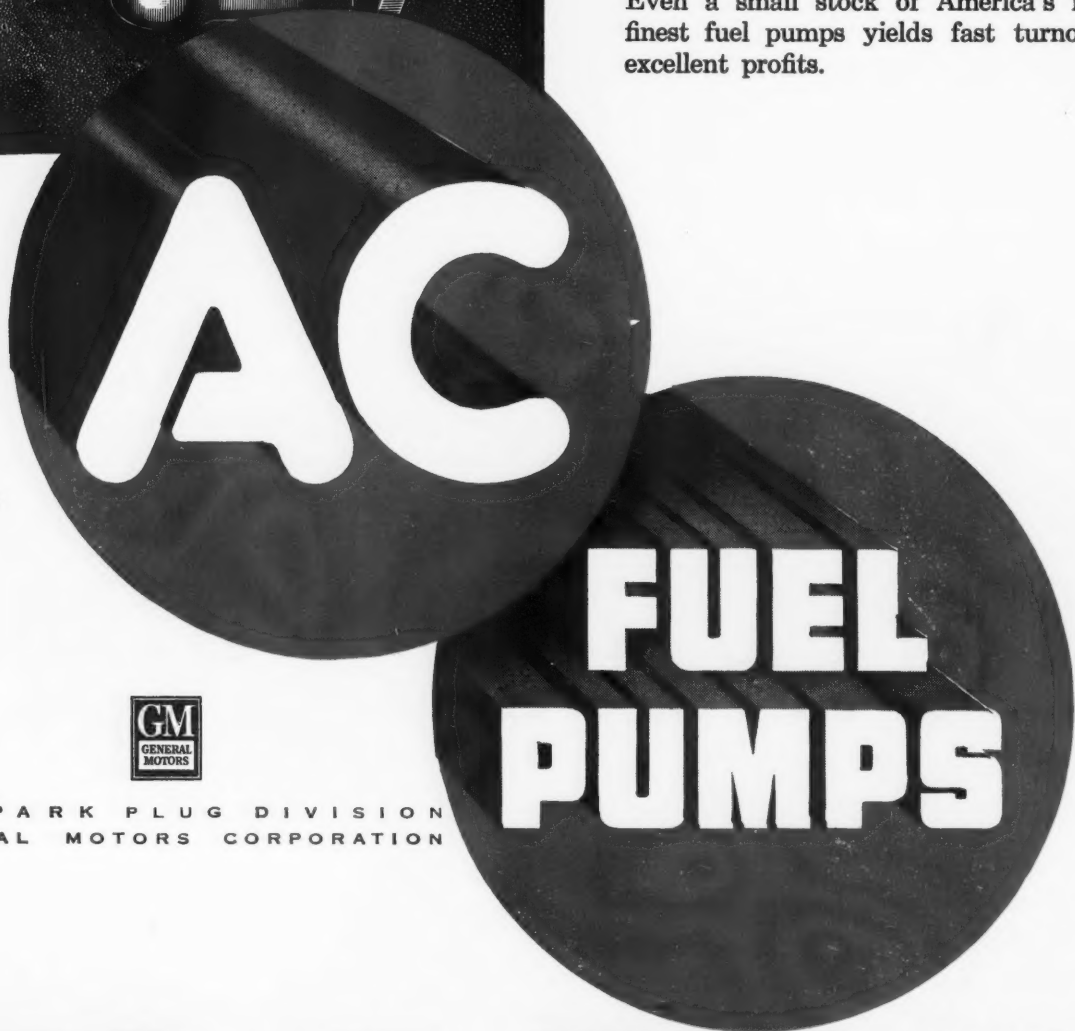


## America's FIRST *and* FINEST

AC *made* the fuel pump market. Since 1927, 90% of America's cars and trucks have been factory-equipped with AC's.

More than 100,000,000 AC Fuel Pumps have been built. More than 40,000,000 are in use. This tremendous and constantly growing replacement market means steady income for dealers—and is the reason why successful dealers have preferred AC Fuel Pumps for 24 years.

Even a small stock of America's first and finest fuel pumps yields fast turnover and excellent profits.

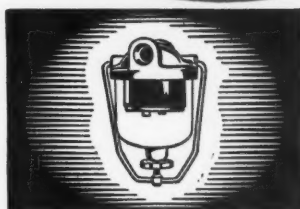


AC SPARK PLUG DIVISION  
GENERAL MOTORS CORPORATION



### AC FLEXIBLE GASOLINE AND OIL LINES

Assortment, with attractive Wall Merchandiser, displays as well as stocks fast-moving numbers.



### AC GASOLINE STRAINERS AND ELEMENTS

Available in handsome Counter Merchandiser for attractive display and easier sales.



## Equipment *Leadership* plus **CORALOX**

AC Spark Plugs are standard factory equipment on nearly as many new cars as all other makes of plugs combined.

In addition to this original equipment leadership, AC gives its dealers the exclusive sales advantages of **CORALOX**, AC's heavily advertised patented insulator.

AC dealers are cashing in on this unique combination. It will help you to increase your spark plug volume, too.



## AC **ALUVAC**

### The Element for You

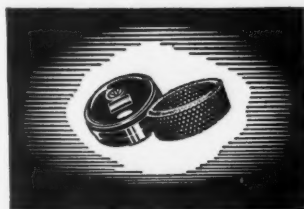
AC is the fastest-growing oil filter line—and the AC Aluvac Element is the reason. It is already standard or optional factory equipment on Chevrolet, Buick, Cadillac and Oldsmobile—and it's made to fit most other makes of filters, too.

AC Aluvac is preferred by owners because it does a better filtering job, removing particles as small as 1/100,000 of an inch in size.

Your replacement business can grow right along with AC Aluvac Oil Filter Elements, if you recommend these better elements to your customers. See your AC wholesaler today.

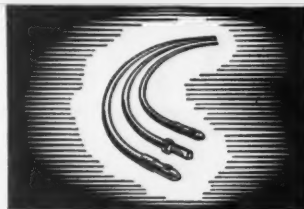


AC Aluvac Oil Filter Element



#### AC AIR CLEANERS AND ELEMENTS

Heavy-duty cleaners; renewal elements. AC's used as equipment by 80% of car manufacturers.



#### AC SPEEDOMETER CABLE-CASING ASSEMBLIES

Also supplied in tailor-made cables, or as bulk cable and casing, with parts.

# Bonded... Riveted ...or Drilled Sets



**Get 'em all from *ONE* source  
...your **WAGNER CoMaX** jobber**

You may require as many different types of brake lining in one day as you have jobs of relining. No matter what you need, you can get it through your Wagner CoMaX Jobber.

The CoMaX line includes lined shoes, either bonded or riveted, drilled sets, rolls, blocks, slabs, or cut segments.

Your Wagner Jobber can also supply

WAGNER LOCKHEED HYDRAULIC BRAKE PARTS and FLUID... Look to him for *all* your requirements—all from one source... Ask for free copy of Catalog AU-500.

You can depend upon WAGNER QUALITY because Wagner products are used as original equipment by automobile, truck, trailer and bus manufacturers.

**Wagner Electric Corporation**

6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

(Branches in Principal Cities and in Canada)

**Wagner**

*...the best known  
name in brake service*

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • Nohol • CoMaX BRAKE LINING • AIR BRAKES  
TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL CRANE BRIDGE BRAKES



# CONVERSATION or VISIBLE PROOF...



*Which Will Bring **YOU**  
More Oil Filter Profits  
?*



Double your filter service volume... a  
WIX Dirtector is equivalent to an extra  
man at your pump!



Today, with modern Heavy Duty Oils in the picture, you're as out-of-date judging the condition of motor oil by the dipstick or on a piece of paper as you'd be trying to sell gasoline from a barrel!

Only with the WIX Dirtector can you accurately show the condition of your customer's motor oil. Whether light or dark—clear clean or dirty—the WIX Dirtector gives both you and the motorist the TRUE answer!

Thousands of WIX dealers are cashing-in on this modern "Engineered Selling" tool. It is so important to sales and profits in oil and oil filter cartridges, that *every* service station should have a WIX Dirtector at *every* pump!

WIX, and only WIX offers you the WIX Dirtector. Contact your nearby WIX distributor for full information. If your Jobber doesn't have WIX, write us today.

**wix**  
TRADE MARK REG.



**OIL FILTERS • CARTRIDGES**  
**WIX ACCESSORIES CORP., GASTONIA, N. C.**

CANADIAN FACTORY: WIX ACCESSORIES CORP. LTD., 11 Wabash Ave., Toronto 3, Ont.





**Mrs. Customer:** And you say that this upholstery is *genuine leather*:

**Mr. Salesman:** Indeed it is. All our convertibles are upholstered in *genuine leather*, as standard practice, and at no extra cost to you.

**Mr. Customer:** That sounds like extra value to me, for I know leather has no equal for lasting quality.

**Mr. Salesman:** In fact, with normal wear and simple care, it actually improves with use. Makes your car a better value when you trade it in.

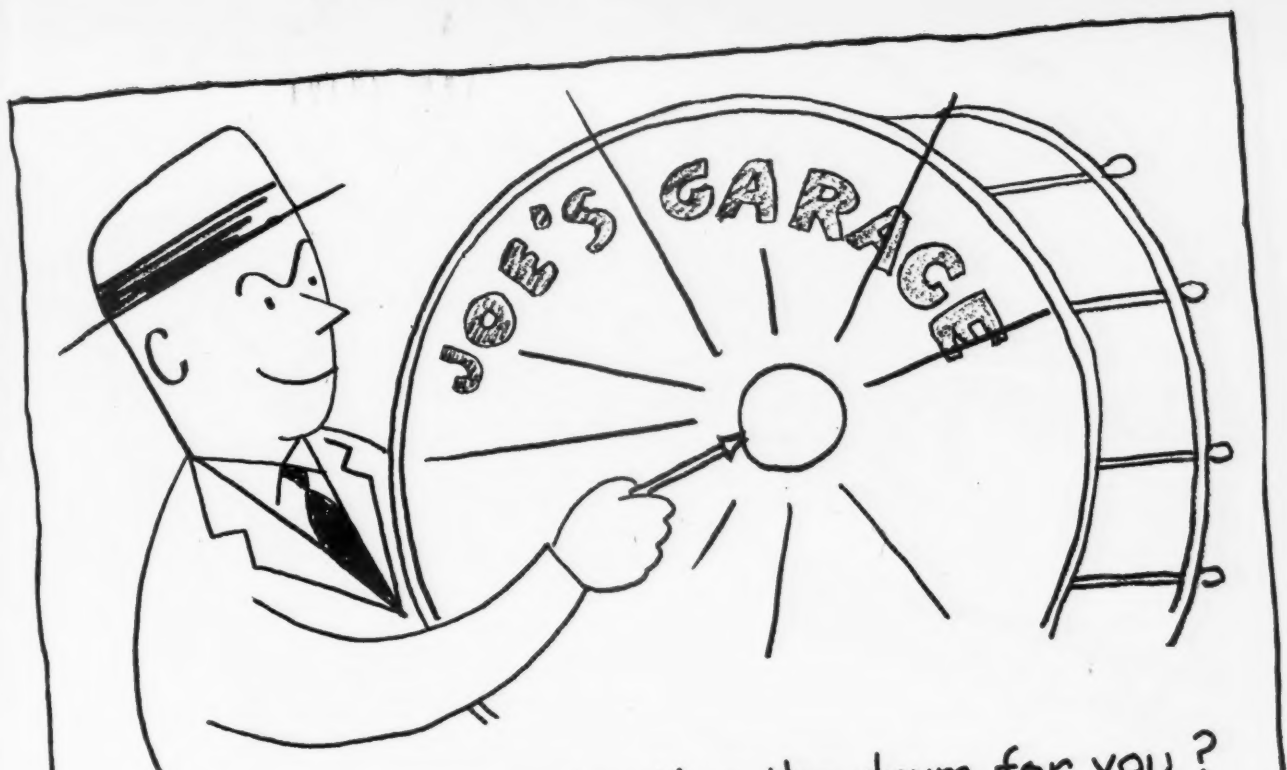
**Mrs. Customer:** And I won't need to bother getting slip-covers fitted. That's a saving, too. Besides, I couldn't bear to hide such smart color. I vote for leather and . . . I think . . . that makes it unanimous.



*For distinction, durability and sales appeal nothing takes the place of **GENUINE LEATHER***

**THE UPHOLSTERY LEATHER GROUP**  
Tanners' Council of America • 100 Gold St., New York 38, N. Y.

American Leather Manufacturing Company, Newark, N. J. • The Ashtabula Hide & Leather Company, Ashtabula, Ohio  
Blanchard Bro. & Lane, Newark, N. J. • Eagle-Ottawa Leather Company, Grand Haven, Michigan • Garden State Tanning Inc., Pine Grove, Pa.  
The Lackawanna Leather Company, Hackettstown, N. J. • Radel Leather Manufacturing Company, Newark, N. J.

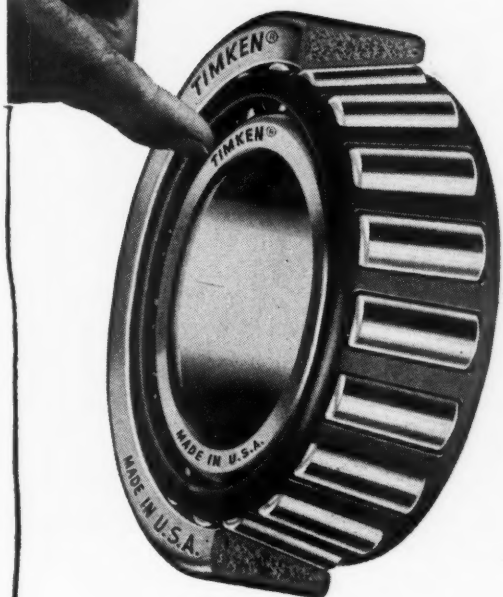


Want customers beating the drum for you?

If you want customers drumming up more business for you, be sure you let them know you use the best replacement parts. When you

install a tapered roller bearing, tell them it's a Timken® bearing—the bearing that car owners know and respect.

## Just tell 'em it's "TIMKEN®"



Timken bearings are rated first choice for original equipment by leading automobile manufacturers. That's because Timken bearings have 1) advanced design, 2) special analysis steels, 3) precision manufacture, 4) complete quality control.

That's why it will pay you to point out the trade-mark "Timken" on every tapered roller bearing you use for replacement. **FREE BOOK-LET!** Send today for "Timken Tapered Roller Bearings—Their Care and Maintenance" to Dept. AM-11, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

# TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

**TAPERED ROLLER BEARINGS**

NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER — BEARING TAKES RADIAL AND THRUST — LOADS OR ANY COMBINATION

*The leader for 18 years*

**IT'S ASBESTOS...**

**IT'S 4-STAR QUALITY**

**Johns-Manville**

**BRAKE LINING ★**



THE OLDEST NAME IN

**4 STAR**  
★ ★ ★ ★  
**Brake Lining Set**

BALANCED FRICTION

ENGINEERED FOR SAFETY

PROVED  
PERFORMANCE

CUSTOM  
MADE

BALANCED  
FRICTION

ENGINEERED  
FOR  
SAFETY

**J-M CLUTCH FACINGS**

A complete line of smooth-acting, long-wearing facings for every type of service . . . precision-molded resin-bonded J-M STM Facings; "cushion"-action J-M Spiral Wound Facings; hard, dense J-M Molded Facings.



**Johns-Manville** *asbestos*



# ...Johns-Manville 4 STAR Passenger Car Sets

Developed by J-M Research and constantly refined to keep pace with the changing needs of the automotive industry—this quality brake lining has consistently set high standards of long life and reliability on millions of passenger cars.

Johns-Manville produced the first molded brake lining ever made—and J-M 4-Star Passenger Car Sets are a further refinement of this famous Johns-Manville "first."

Recognized as one of the longest wearing passenger car brake linings on the market, 4-Star sets have led the field in quality ever since they were developed, in 1933, by Johns-Manville.

J-M 4-Star sets are custom made for all popular passenger cars, offering a dependable combination of balanced friction, stopping ability, and long wear. Each segment is furnished in the correct friction required to give the utmost dependability under all driving conditions. J-M 4-Star Sets assure your customers of 4-Star performance . . . longest life and greatest all-around reliability in the high-quality field.

## A complete line—backed by the Johns-Manville name

The J-M line of automotive clutch and brake friction products is backed by the most famous and respected name in asbestos friction materials.

When you stock this complete, profitable line, you have assurance that you are offering your customers the best products of their kind. And you have the additional assurance that never-ending research

keeps Johns-Manville automotive products way out ahead in precision, quality, and performance. It is a line that builds volume sales and satisfied customers.

—Now a complete Johns-Manville  
**BRAKE SHOE EXCHANGE SERVICE** with depots  
strategically located across the country

This new, expanded Johns-Manville service opens up tremendous opportunities for jobbers and their dealers to build new sales outlets and greater profits! Dealers can now offer fast, efficient, *dependable* service with completely reconditioned and relined brake shoes without carrying large inventories.

With this new J-M service, you are in a position to supply your customers with the best of materials applied by skilled mechanics under careful inspection and ideal factory conditions. Whether riveted or bonded-on, the J-M Brake Shoe Exchange Service assures you of a top-quality relining job every time.

**Week after week — Johns-Manville supports your selling efforts with nationwide customer promotion and advertising campaigns!**

In changing times like these, the dependability of your source of supply counts heavily. The Johns-Manville Franchise offers many advantages. Why not learn more about it? Write Johns-Manville, Box 290, New York 16, N. Y.

## J-M FLEET TESTED

For medium and light commercial vehicles. "Fleet tested" in actual service on many of the nation's busiest fleets . . . your guarantee of top performance. Correct friction combinations give maximum life, resist high temperatures.

## J-M BRAKE BLOCKS

Exceptionally high heat resistance built-in. Available for high, medium, or low friction service with correct formulations for long, trouble-free service life. Molded to fit standard brake shoes.

## J-M WIREKLAD

Reinforced with a revolutionary new flexible metal fabric, "WireKlad" insures conformability, high rivet-holding strength, excellent bonding characteristics, and less distortion in "hot" service.

# FRICITION MATERIALS



**Sealed Power**  
**MD-50 STEEL OIL RING**  
The only ring with the FULL-FLOW SPRING

Controls oil even in  
**BADLY TAPERED**  
and  
**OUT-OF-ROUND BORES**

**Sealed Power**  
**CHROME-FACED RING**  
For Triple Mileage

Successfully fights  
**ABRASION, FRICTION,**  
**CORROSION, HEAT**



SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

**Sealed Power Piston Rings**

BEST IN NEW CARS!

BEST IN OLD CARS!



## MOTOR AGE

November • 1951

The 1952 Dodge has modified grille, wheel covers, hub caps, tail light assembly and rear fender trim. Dodge Tint Safety Glass windows and windshields are optional.



# newscene

### CPR-83 for Re-sellers Of New Passenger Cars

A new dollars and cents ceiling price regulation for re-sellers of new passenger automobiles was issued by the Office of Price Stabilization effective October 15, 1951. This regulation is CPR-83. Current basic ceiling prices in general for new automobiles will be maintained in these special orders. The Regulation applies also to extra special and optional equipment and takes into account factory to dealer transportation cost, federal taxes, state and local taxes and customary established prices and charges for any other item of equipment or service requested by the purchaser. Important provisions in the new Regulation are: 1) retail dealers must post their ceiling prices conspicuously; 2) dealers must furnish purchasers with an invoice or other document stating the ceiling price and certain other charges

and allowances; 3) dealers must continue selling at no more than present ceiling prices until OPS establishes by special order specific ceiling prices for the automobile sold; and 4) dealers may sell below their ceiling prices and need not add on the full amount of any authorized charge.

### NADA Adopts New Code of Ethics

The National Automobile Dealers Assn. has adopted a new code of ethics, according to a recent announcement by J. Eustace Wolfington, chairman of NADA's Public Relations Committee. The new Code which is written by the Public Relations Committee, replaces a Statement of Policy which has guided the association since 1946. It was approved and adopted by the Association's directors at the last meeting. Members who display the code pledge themselves to maintain the highest possible standards in carrying on business.

### Shortage of Trained Mechanics Still a Serious Problem

Another problem facing the automotive repair industry as a result of the defense program is a shortage of trained mechanics. There now are fewer automotive mechanics than there were two years ago, particularly in automobile dealer shops, and with cars made during the peak production years of 1949 and 1950 swelling the bulk of service work, the problem may be a serious one next year. Reasons for the decline in the number of mechanics include losses to the draft; reluctance of younger men facing imminent military induction to enter a training program, and competition from defense industries with their high wages, possible draft immunity, and patriotic appeal. Automobile companies are urging dealers to take on and train members of automotive mechanics classes in high schools, regardless of possible draft status.



## Willys Will Shortly Announce New Car

The new Willys passenger car to be announced soon will be powered by a new 6-cylinder high compression F-head engine. Specific details of the engine and the car still are secret, but Ward M. Canaday, Willys president, says that the power plant despite its high compression ratio, operates on regular grade gas and has the highest horsepower per cubic inch displacement of any full sized production motor. He says the car itself is larger than has generally been expected, with its wheelbase and overall length not too greatly different from those of the Big Three volume lines. Willys has spent about \$10 million for research development and tooling for the new car. Biggest question mark about the car is its price. Mr. Canaday said that it will be in the popular price range, presumably in competition with Ford, Chevrolet, and Plymouth. It is difficult to see, however, how the kind of car Willys is talking about can be priced any lower than the very top of the Big Three.

## Packard Appoints Briggs General Sales Manager

Clare E. Briggs has been promoted to general sales manager of the Packard Motor Car Company, according to LeRoy Spencer,

executive vice president. Briggs succeeds Karl M. Greiner, who will assume a new Packard assignment which will be announced later. Briggs has been with Packard since 1939 when he came with the organization as assistant regional manager of Packard's Southwest region at Dallas.



The 1952 DeSoto can be identified by the name, spelled out in block letters instead of joined script and by a higher, thinner hood ornament. On the rear the combined stop and back-up lights now have a single instead of a double cross bar.



## Open Air Show Room . . .

McCarroll's, Inc., Cleveland Oldsmobile agency, features a roofed used car lot that is really an extension of indoor facilities in its new 35,000 sq. ft. building on Euclid Avenue. D. J. McCarroll reports, "This outdoor area runs right into the sidewalk and can display eight or nine cars. It is brilliantly lighted at night and the three doors at its rear are always open in congenial weather, inviting customers to roam right from the sidewalk into our used car sales room. The canopy area keeps cars protected and is generally a very profitable operation."

## West Coast Pay Rates For Auto Mechanics

A recent survey of pay rates to automotive mechanics on the West Coast by the U. S. Bureau of Labor Statistics showed that in Seattle and Portland the rate was \$2.01 per hour, lower than in California.

Other data from this preliminary study showed these hourly rates for body repairmen: Los Angeles, \$2.25; Portland, \$1.95; San Francisco, \$2.24; Seattle, \$2.09.

Practice in San Francisco and Seattle is to pay automobile repairmen on a straight hourly basis; while in Portland and Los Angeles most are paid on a flat rate basis which is a percentage of the labor charges a customer pays.

## Wisconsin Trade Association Elects Officers for 1952

Eight hundred and fifty dealers attended the 23rd annual convention of the Wisconsin Automotive Trades Association. The following officers were elected for the coming year: Harry Seidell, president; Erwin Deising, vice president; Otto Sherry, second vice president; Paul Schmidt, secretary-treasurer.

## British Car Imports Will Not Be Cut in 1952

Export of British automobiles to the United States will be maintained throughout the coming year despite an overall 40 per cent cut in production due to the rearmament program. Exports of British cars to the United States increased nearly 50 per cent during the first eight months of 1951, in comparison to the same period in 1950. 15,033 units were imported by the United States from January through August this year, compared to 9,824 units during the same period of 1950. Sales of British cars in the United States during 1950 represented a value of \$16,730,000.

## Thermoid Brake Test Truck Fitted with Special Equipment

A specially engineered test truck is now operating on Thermoid's Mountain Test Course at Jenners-town, Penna. The truck is equipped with: 1) Fifth wheel which is connected to intricate devices measuring stopping devices and actual miles per hour; 2) Head Tests totalling 13,900 pounds on the rear wheels and 3,900 pounds on the front wheels; 3) A line pressure gage which measures lbs./inc. squared, the hydraulic brake lines; 4) Wagner Tachograph to record number of stops and how long it takes to stop from various speeds; 5) Special custom made Stop Counter; 6) Decelerometer which measures ft/second squared, stopping distance; and 7) A pedal travel gage for recording variations in the length of brake pedal stroke due to heat and wear.

## NADA Convention Plans Includes Tour for Ladies

At a recent meeting of 1952 NADA convention committee decided to include a special planned bus tour of Manhattan's top attraction in the program for the ladies. The trip will start from the Waldorf-Astoria, Wednesday, January 30, the last day of the convention, and will last about an hour. It will be free to all NADA ladies and for ladies only. Husbands are invited to stay out.



Nash Motors latest model is the Rambler Deliveryman, a commercial utility vehicle designed for business, industrial, retailing, and farm usage. It has an all steel platform more than six feet long with the tail gate down, and offers more than fifty-two cubic feet of cargo space with the tail-gate closed. Federal Reserve Board has ruled that the Deliveryman is a commercial car and as such is not subject to the credit restrictions under Regulation W. It is offered with automatic overdrive as optional equipment.

## Another Regulation Planned For Small Businessmen

The Office of Price Stabilization hopes to issue within the next few weeks a retail small business regulation. All small retailers will be affected. Retailers whose annual volume is below a stipulated figure will be authorized to file with

OPS an affidavit stating their intention of pricing under the regulation. A base period, still undetermined, will be established, and each retailer who qualifies for coverage will base his current selling prices on prices in effect during this period. There is a hardship provision.



## Coaster Queen . . .

Blonde Carolyn Levand, 15-year-old daughter of Victor A. Levand, of Germantown, Pa., recently culminated four years of racing by winning the American Coaster Derby Association's national championship at Bangor, Penna. It was the first time in history that a girl has won the coveted title. Her father is owner of Levand's Garage in Germantown.



# —news scene—



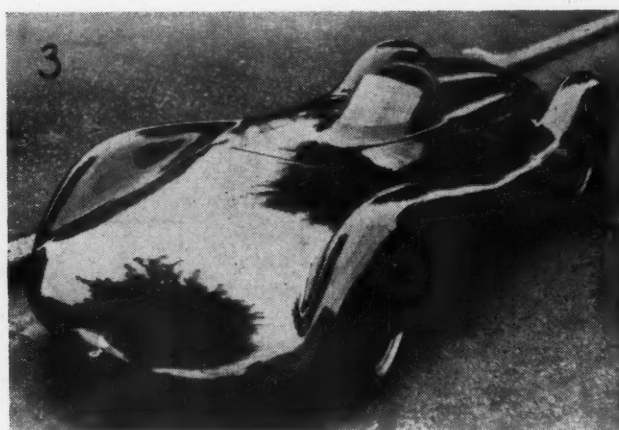
**1.** What goes up must come down—proves French inventor Raymond Haussteter with his 40 lb. one-man helicopter. This aerial motorcycle features a set of main rotors, and has a one gallon fuel tank with a two hour range. The apparatus is strapped to the pilot's back.

**2.** This three-wheeled streamlined Goliath has broken several automobile speed records recently. West German officials and the Minister of Economics Ludwig Ehrhardt, scrutinize the racing car.

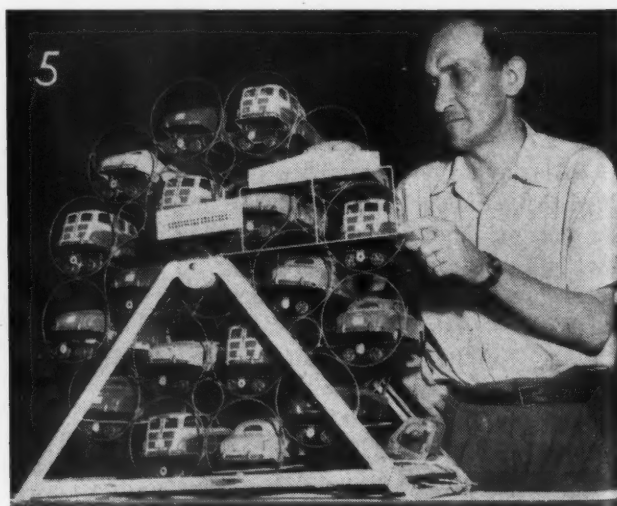
**3.** Among the many entries in the Monthery Races, held outside Paris recently, was this new neatly faired Cooper, Britain's latest midget racing car.



**4.** Auto Racer, Egon Bruetsch, created this new addition to the German Automobile Family. Its nine horse-power motor pushes it at a maximum speed of 55 miles per hour. Cost \$750.



**5.** Push the button and your car rolls around. Italian Professor Vailati models his ferris-wheel parking lot. Eighteen horizontal platforms for the cars can be built on 860 sq. ft. of property.





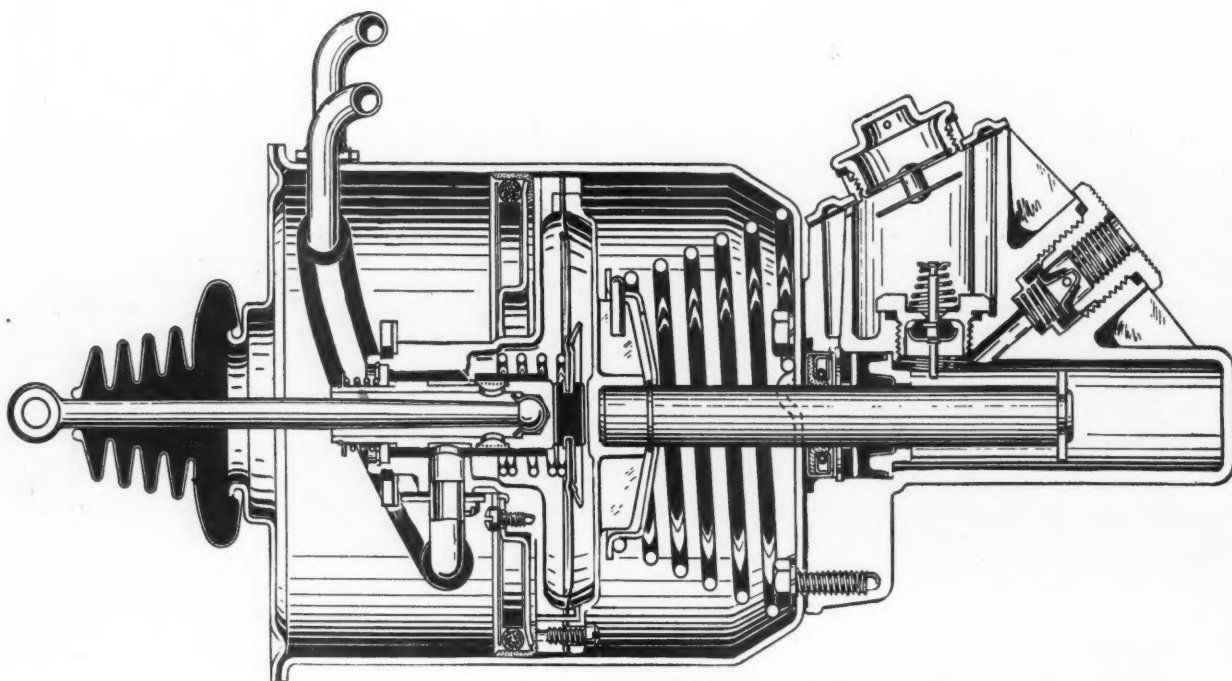


**P**RACTICAL public relations means no more than being a good neighbor in the community in which you live and work.

An example of being a good neighbor is shown here: when, last month, Edward J. Ronan, Ronan Motors, Dodge-Plymouth dealer of Philadelphia, sponsored a flight to Detroit for fifty friends and prominent Philadelphians. The trip included visits to both Dodge and Plymouth plants to witness modern mass production methods. Factory officials greeted the Ronan group and the visitors were impressed not only by what they saw but by how graciously good-neighbor Ronan treated them. Mr. Ronan (center of group above) is a community leader in his home town. He is president of the Philadelphia Automobile Trade Association; Chairman of the Pennsylvania Safety Advisory Committee; member of the OPS Automobile Retailers Advisory Committee; one of the original members of the Dodge Dealer Conference; and past president of the Philadelphia Chapter of the Knights of Columbus.

# Maintenance on Packard's

This vacuum - powered actuating mechanism, which is available on 1952 Packard cars, utilizes a foot treadle. Here is trouble - shooting and adjusting information



Exploded view of the cylinder with the end plate removed showing the internal parts.

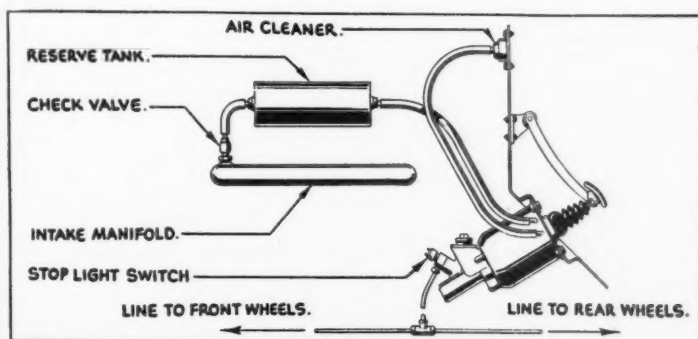
**T**HIS power brake is operated by engine vacuum and reduces pedal pressure by at least forty per cent. It is simple in operation and reduces driver reaction lag by an average of twenty-five percent. It is so designed that it retains enough pedal resistance to give the driver a definite feel of the brake by the introduction of a small vacuum diaphragm. The

booster unit is mounted integrally with the master cylinder of the hydraulic brake system.

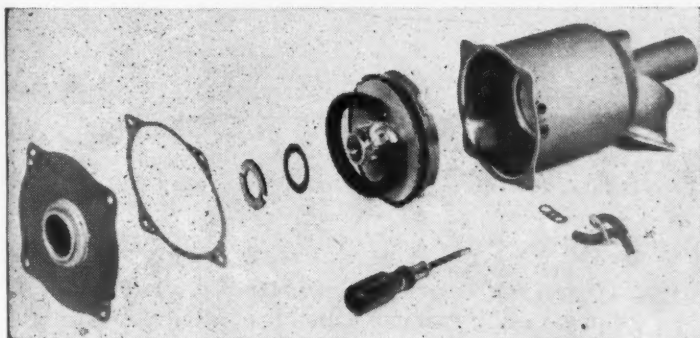
The latter differs from the conventional by not having a compensating valve. The spring mounts vertically within the master cylinder. Another special feature of this system is the provision of a vacuum reserve tank to assure at least three full stops in the event of engine

# Easamatic

by John K. Montgomery, Technical Editor



Schematic view of the complete Easamatic mechanism showing all the related parts.



Cutaway view of the Easamatic in the holding position

stalling or missing fire consistently.

The Bendix booster attachment is mounted directly on the toe board, beneath the accelerator. Like conventional pedal hook-ups, the Easamatic is actuated by a treadle mounted pedal only  $4\frac{3}{8}$  inches from the floor and so located with respect to the accelerator pedal as to make it possible for the driver to pivot his

foot and sweep from the accelerator pedal to the brake pedal.

The brake system itself is serviced in the conventional manner. No lubrication on the treadle-vac piston packing is needed as it is lubricated at the time of original assembly and needs no further lubrication.

To test the system, road test the car by making a brake application at about twenty miles per hour to determine if it stops evenly and quickly. If the pedal has a spongy feel when the brakes are applied, air is present in the hydraulic system, and the system should be bled.

With the engine stopped, hand brake applied and transmission in neutral, apply the brakes several times to destroy all vacuum in the system. Depress brake pedal, hold foot on the pedal and start the engine. If the vacuum cylinder is operating, the pedal will tend to fall away under foot pressure, and less pressure will be required to hold the pedal in the applied position.

If no action is felt, the vacuum system is not functioning. Stop the engine and again destroy all vacuum in the system. Depress the brake pedal and hold the foot pressure on the pedal. If the pedal gradually falls away then the hydraulic system is leaking. If the pedal travels to within one inch of the toeboard, the brake shoes require adjustment or relining.

For more specific test results, connect an hydraulic pressure gage capable of registering at least 1000 psi to the bleeder valve opening at one of the cylinders. Install a pedal jack to the pedal or apply the pedal using a push scale. With the engine running, obtain the following results:

Eleven pounds pedal pressure should result in 90 to 110 psi line pressure.

Seventy-five pounds pedal pressure should result in 550 to 650 psi line pressure.

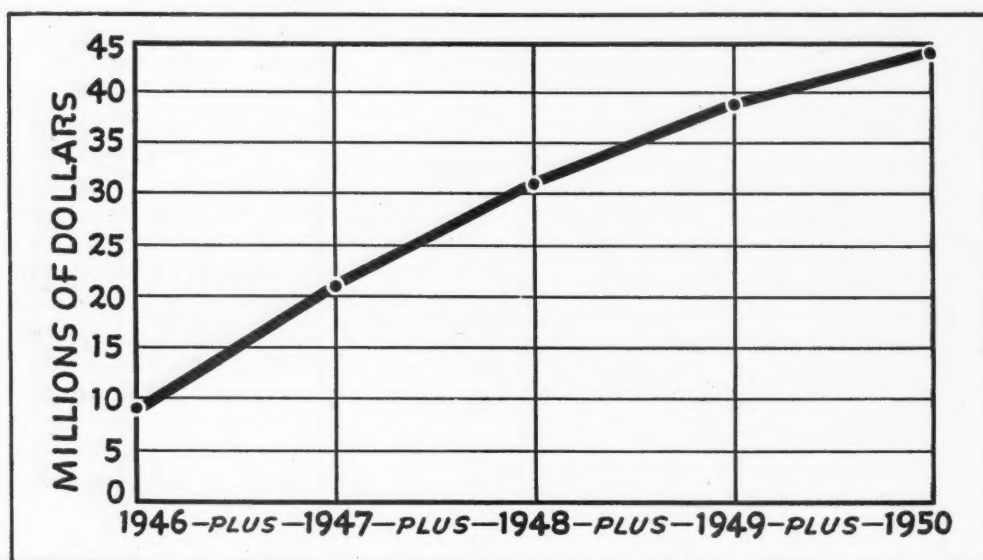
## Troubleshooting the Brakes

Brake troubles may be diagnosed if the complaint is understood. The trouble will always show up in one or more of the four ways listed below. Related parts of the power brake system should be checked before dismantling the

(Continued on page 92)



# PUTTING THE FINGER On Cooling System



The graph above shows cumulatively the potential market for cooling system cleaning labor and material on 1946 to 1950 cars.

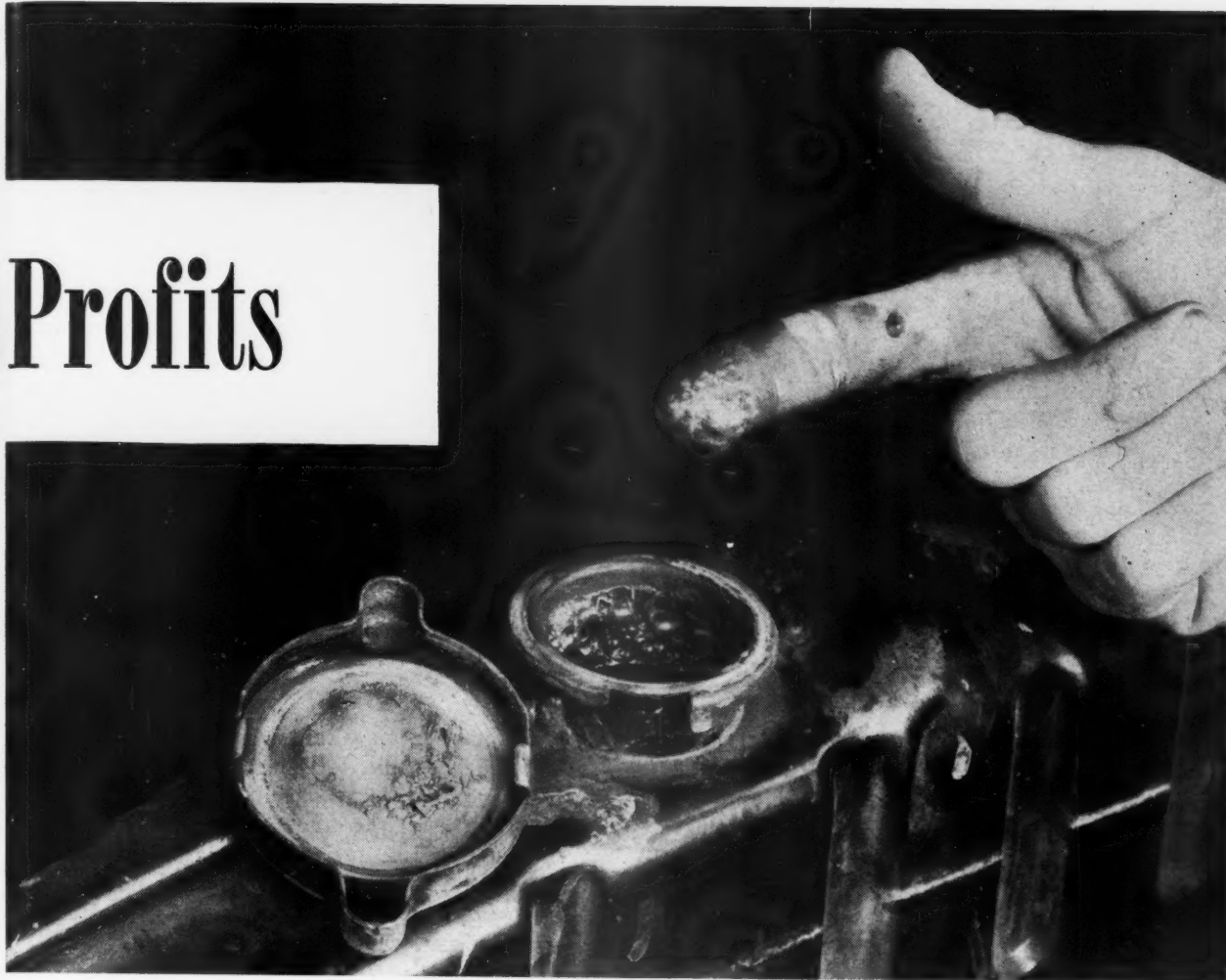
**An editorial investigation shows how  
a "Finger Test" beckons big business**

**A**NOTHER MOTOR AGE editorial investigation has just been completed. This involved sticking a finger into your business, but it was worth it. Lifting hoods and removing radiator caps, MOTOR AGE editors explored many hundreds of top radiator tanks to determine how much cooling system cleaning business could be sold. The results indicate that 35 out

of every 100 cars in the 1946-1950 age range have cooling systems which should be cleaned. Six out of every ten 1946 cars, five out of ten 1947 cars, four out of ten 1948 cars, two out of ten 1949 cars and one out of ten 1950 cars had radiators which were lined with scum, scale, rust and oil. These cars are good prospects for a cooling system cleanout. The method used in the survey to determine whether the car was a prospect would work equally well in a shop. Lift the hood, open the radiator cap and stick in a finger. If you can come up with an accumulation of foreign matter, there will be little trouble convincing the owner that there is work to be done. Try it on 100 cars and you should come up with 35 prospects.

In dollars and cents, the "finger test" shows us this. The radiators examined will require

# m Profits



cleanouts ranging in price from about \$3.50 to about \$12.50, including material and labor. Applying the percentages resulting from the "finger test" to the total number of cars for each model year, we have a potential market figure from which we can estimate the possible sales volume of cooling system cleanout work. These figures have been graphically presented in the illustration above.

And that's only the beginning! There are several different types of cooling system filters on the market now which can be sold at the time the system is cleaned. Also, rust inhibitors, thermostats, hoses, hose clamps and other associated products should be sold at this time. And just because the radiator water is clean is not a signal to shy away from selling. The car

by Arthur H. Nellen, Jr., Service Editor

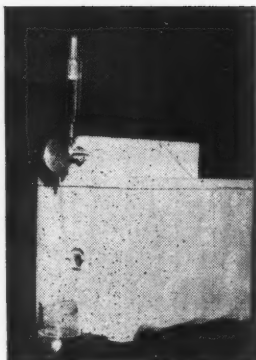
owner should be told about the many products which are on the market to help him keep his cooling system clean.

If the top tank is found to have rust, sludge, and scale, the rest of the cooling system is probably even more clogged. This foreign material tends to collect in the tubes of the radiator as well as in the passages of the block. Another important point—none of the rust seen in the top tank originated in the radiator—it all came from the block itself, which is made of cast iron. This rust and scale builds up in the water jacket, insulating the hot cylinder walls from the cooling water. This creates hot spots which

*(Continued on page 94)*

# The Antifreeze Tester

## Used by NBS



The National Bureau of Standards has developed a practical indicating device which they use for determining the freezing point of any anti-freeze.

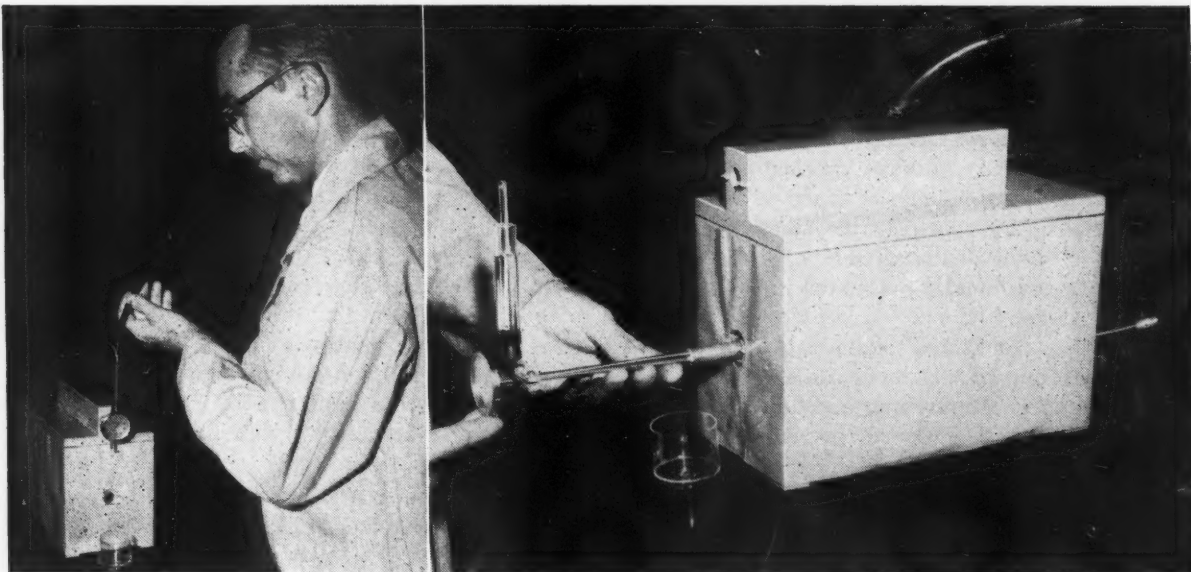
**A**N easily constructed device recently developed by R. B. Rudy and J. I. Hoffman of the National Bureau of Standards makes it possible for automotive service men to make very reliable tests of automotive antifreeze solutions. The NBS Antifreeze Tester determines the "practical" freezing point, that is, the lowest temperature at which the solution will flow through a passage comparable in size

to those found in an automobile radiator. Unlike the widely used hydrometer, the new device is applicable to all types of antifreeze solutions or any mixtures of them now on the market.

The heart of the device is a brass cylinder having a passage 1.5 mm (0.06 in.) in diameter, through which the sample flows until, as its temperature is lowered, the formation of ice  
(Continued on page 112)

Placing a sample of the antifreeze mixture into the tester. The liquid flows into a brass cylinder.

The NBS tester with the cylinder partially inserted into the freezing cabinet, which contains dry ice.







1952 "400" four door sedan showing the changes in molding and louver treatment.

# 1952 Packard Has Power Brakes

Among other improvements are modifications in the Ultramatic drive, several minor engine changes and refinements in both interior and exterior styling

**A**LTHOUGH 1952 Packard models remain unchanged in styling and sheet metal, there are many mechanical changes. From a mechanical standpoint the most important feature is the power brake, offered as optional equipment. Packard's Easamatic, as it is called, is supplied by Bendix and represents

about two years of cooperative engineering designed to provide some exceptional operational characteristics.

Packard will offer a choice of eleven colors and two-toning on up to 20 per cent of 1952 models.

Ultramatic drive has been treated to some extensive mechanical changes designed to improve performance. One of the major changes is the adoption of a direct drive clutch (cut-out clutch) of only 9-in. diameter. Significance of this change may be appreciated from the fact that the clutch originally was 11 $\frac{3}{4}$ -in. diameter and more recently 11 $\frac{1}{4}$ -in. The new clutch has ample torque capacity for current engines.

Exterior treatment of the new cars has been given some minor touches such as new moldings, new louvers, more massive grille and bumper treatment, and changes in emblems and hood ornaments on various models. Rear license plate lights have been added on the "200" models as well. Door locks and trunk locks have been improved.

Coming to mechanical features, the Easamatic power brake, operated by engine vacuum, is said to reduce pedal pressure by 40 per cent and is so simple in operation as to cut driver reaction lag an average of 29 per cent. On the other hand, Packard has retained enough pedal resistance to give the driver a definite "feel" of the brake. This "feel" is  
(Continued on page 132)



Larry raised his eyes to the skies with the sad look of a man betrayed.

# Pop Gets

Larry decided that this

**G**US GREENE brought his mud-bespattered old Dodge '41 to a cautious stop in front of Pop O'Neill's neatly kept gas pumps.

"Hi ya, Bub!" he said jauntily to Tommy Winters, who came promptly out to wait on him. "I want to talk to your boss about business, but put in a dollar's worth of gas since I'm here." With the sprung-kneed gait of an old dirt farmer he made for Pop's office. "Hello, Pop," he shouted before he was through the door. "Bringin' some business to you."

"Hello, Gus," said Pop cheerily, "haven't seen you for some time."

"Nope," Gus replied shortly, "do most of my work myself. But this time I'm stuck. The Dodge here developed a miss. I can't seem to find it anyhow. How much will it cost me for you to take a look at it?"

"Depends on what's wrong," Pop replied smoothly. "We charge for the work we do, not for the estimate. But let's take a quick look. Maybe we can

# a Car With a Big Build-up

hunting was strictly for the birds, and was back in time to see Pop catch a miss

by Charles M. Kenyon, Managing Editor

see right off what's causin' the trouble old-timer." He held the door open while Gus shuffled out, then followed him back to the car. "Ninety-one thousand!" remarked Pop in surprise as he looked at the speedometer reading. "When did you have it overhauled last?"

"Never had the head off," snapped Gus testily. "It's been a pretty good car."

"Certainly has," agreed Pop. "But it seems to me as though maybe the time has come when you'll have to put a little more money into it."

"Nope," said Gus. "If she'll go for ninety-one thousand without repairs, there's no reason why she won't go a hundred and one thousand. It can't be anything too serious. I've always taken pretty good care of it."

Pop revved the motor up to driving speed and sure enough a miss developed immediately. "When a car's been as far as this one without an overhaul—" He paused . . . "Not even rings?" he asked questioningly.

"Nope," said Gus. "Nothin' 't'all."

"When a car's been this far," Pop began again, "it really needs a major overhaul. Anything else would be just patchwork. But if your mind's made up, you leave it and we'll give it a tune-up. Maybe the tune-up will take care of your miss. But I doubt it."

"I'll tell you what I'll do," said Gus. "I can get a ride back up tonight with the milk truck and you bring the car up to my place as soon as it's ready."

"All right," Pop agreed, "but one thing before you leave, Gus. If we find the car needs major work, we'll call you. We don't like to do patchwork around here. We repair cars."

"Well," said Gus hesitantly, "I guess so." From the back of the Dodge he took a burlap sack, quarter full of mysterious objects, slung

it over his shoulder and started off for the corner to meet the milk truck.

As he disappeared, Larry came out of the shop. "Hi, Pop. What are we supposed to do to this one. Gus got real troubles?"

"I don't know," admitted Pop. "But he wants us to start off with a tune-up. It's got ninety-one thousand miles on it now, so I guess he's right in thinking he needs a tune-up."

Larry went right to work on the Dodge. Installed new points, condenser, then cleaned and regapped the plugs, and cleaned and adjusted the carburetor, then checked the compression. He found that it was low, but approximately the same on all cylinders, and not so low that it would adversely affect performance. Then he put the vacuum gage on, too, but the hand remained steady. When he tried it out, however, the Dodge still missed.

"What do you suppose it is?" inquired Tommy.

"Well, it can't be valves, I don't believe," said Larry, scratching his close-cropped head with a greasy forefinger, "'cause it has good compression. Maybe it's in the spark."

He checked the spark, but on each cylinder it was plenty strong. It was almost closing time, and Pop came in to see how the job was progressing.

"Not so well," admitted Larry. "For some reason we've run into trouble." He explained to

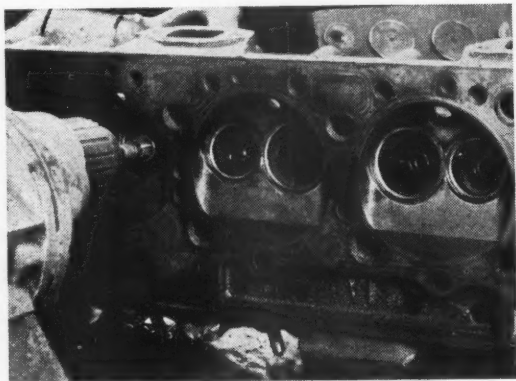
(Continued on page 76)



Pop O'Neill



## From My Notebook:

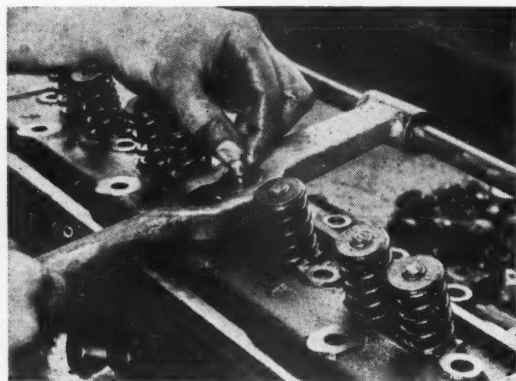


Remove the counterbored section of the exhaust valve guides using a  $\frac{1}{32}$  inch drill, ground flat or a reamer. Drill only to the end of the counterbore.

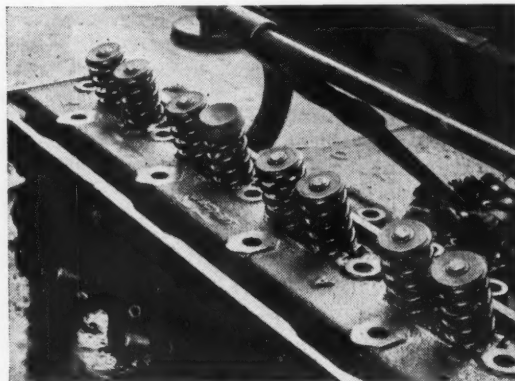
## Olds and

These points shouldn't be overlooked

**B**EFORE removing the cylinder heads to do a valve job, the hydraulic lifter operation should be checked. If the engine has a tendency to cut out at high speed and idles very rough it usually indicates that the lifters are gummed and should be taken out and cleaned. A quick check on the lifter operation can be made by inserting a



When assembling valve springs always use new neoprene seals. This seal prevents oil from going down the valve stems.



Seals can be tested for leaks by installing a wheel cylinder cup over the cap. Cup should hold vacuum indefinitely.

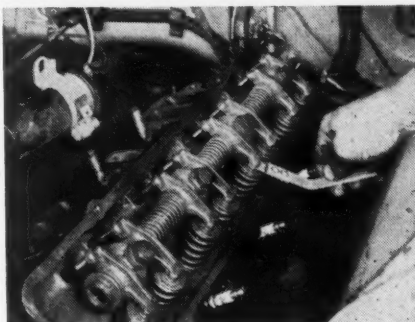
# Caddy Valves

when working on Cadillac and Olds engines

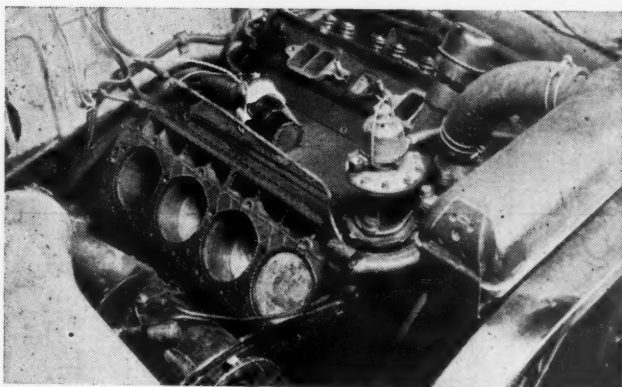
.070 in. feeler between the rocker arm and valve stem. Insert the feeler when the cylinder is in firing position then note the time it takes for the lifter to release the feeler. It usually takes from 2 to 3 minutes. If the lifter won't hold the feeler it should be examined also as one in this condition would be noisy.

No provision is made for initial adjustment.

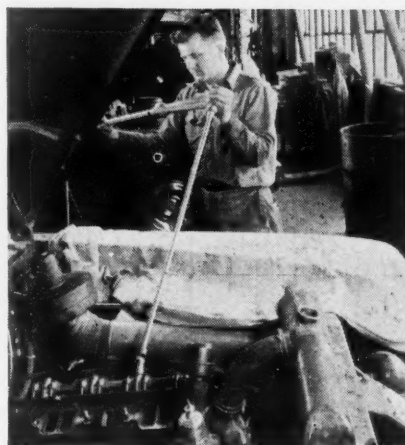
(Continued on page 102)



Special tool in position for checking lifters with cylinder in firing position compress valve spring and insert feeler. If it won't hold the feeler in place for 2 or 3 minutes it is faulty.



Clean surfaces of Cylinder block and head. Coat gasket with compound on both sides to insure good seal and eliminate possible comebacks.



Always tighten cylinder head bolts uniformly. Use a torque wrench 65-70 ft. lbs.

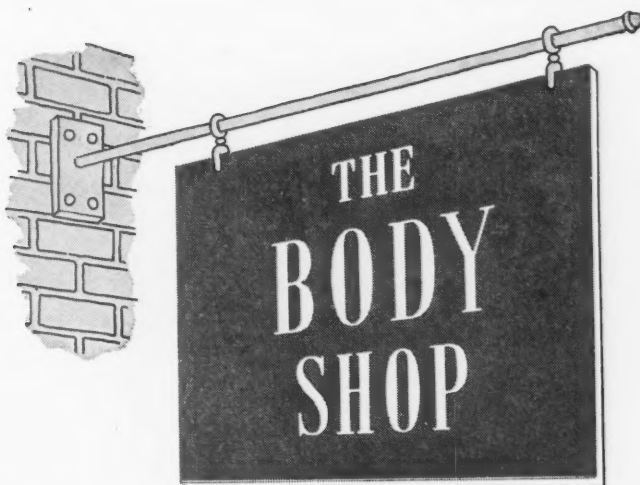
# 1951 New Passenger Car Registrations by Makes by States\*

STATE	Buick	Cadillac	Chevrolet	Chrysler	Crosley	De Soto	Dodge	Ford	Henry J	Hudson	Kaiser-Frazer	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willlys	All Others	Total
Alabama	August 381	72	1223	105	3	80	312	977	72	70	36	30	280	138	318	56	722	338	274	33	9	5,800
Arizona	August 3244	582	10458	998	43	655	2239	9100	622	489	305	219	2201	824	2089	374	4845	2812	1710	227	70	44,000
Arkansas	August 178	34	487	62	9	30	87	329	18	49	13	14	115	56	102	21	206	123	98	12	17	2,000
California	August 1256	252	3764	429	38	211	695	2888	131	385	140	85	754	398	789	184	1302	919	819	74	103	15,300
Colorado	August 178	39	655	58	5	68	186	582	54	38	31	15	127	104	140	21	473	170	153	35	2	3,134
Connecticut	August 1850	362	6363	577	27	584	1381	4973	385	401	330	97	1210	588	1207	221	3457	1650	1010	228	9	26,900
Delaware	August 2604	951	6671	1161	15	798	1946	5534	172	618	220	221	2045	1248	1871	399	3609	2420	2014	194	637	35,346
District of Columbia	August 21632	7440	56826	10470	194	6386	13339	45603	1771	5685	1874	1843	16025	8187	16245	3365	27291	17800	14316	1512	832	281,446
Florida	August 287	71	677	124	8	70	211	592	10	63	23	29	229	111	210	54	461	217	184	32	13	3,696
Georgia	August 2938	572	6099	1138	79	543	1642	5279	225	1077	254	214	1669	898	1716	430	3235	1902	1056	275	80	31,291
Idaho	August 448	155	1103	214	10	158	532	919	117	137	86	57	318	227	382	101	725	438	307	39	88	6,531
Illinois	August 4024	1204	10103	1799	70	1164	3551	7707	1021	1145	713	290	2574	1393	3325	894	5612	3485	2382	388	533	53,337
Indiana	August 88	32	328	18	1	20	73	261	14	21	10	7	54	33	53	17	128	104	81	1	5	1,349
Iowa	August 877	208	2585	249	21	160	650	2172	127	174	109	67	444	215	672	121	1021	861	607	42	28	11,416
Kansas	August 164	67	428	63	1	34	85	351	26	45	10	16	76	60	155	24	423	142	56	4	17	2,247
Kentucky	August 1326	483	4000	855	9	325	1130	2887	209	300	80	120	663	330	1175	210	3141	1272	506	67	124	19,012
Louisiana	August 489	174	1382	172	30	138	485	1185	133	93	51	57	399	174	425	106	945	408	272	86	97	7,302
Maine	August 4996	1499	12561	1902	356	1017	3474	10597	1331	930	583	518	3808	1303	3135	902	6636	4325	1954	715	940	63,482
Maryland	August 688	114	1628	122	9	104	445	1454	96	82	51	42	380	135	390	74	686	593	336	33	36	7,696
Massachusetts	August 5826	1007	16080	1422	92	844	3431	13872	918	807	663	488	4027	996	3196	711	6931	5758	2744	339	216	69,966
Michigan	August 178	32	412	66	1	40	135	347	14	47	29	12	135	85	88	28	184	127	131	28	4	2,111
Minnesota	August 1449	261	3249	457	8	317	847	2532	142	532	279	99	780	587	797	255	1513	1094	1047	242	28	16,525
Mississippi	August 1971	534	5007	670	21	599	1617	4518	122	529	245	138	1217	850	1287	308	3133	1580	972	61	351	29,000
Missouri	August 20948	4920	49422	7811	205	5858	15588	37964	1845	8379	3054	1274	11174	7215	13806	3773	31082	14998	8889	621	1337	250,163
Montana	August 691	184	1941	258	22	255	685	1841	109	246	136	50	372	411	497	117	1350	645	881	41	7	10,719
Nebraska	August 7977	1697	24375	3078	146	2340	5694	18848	1300	2618	1364	468	3914	3364	5538	1131	12450	7120	8006	461	91	112,140
Nevada	August 543	128	1891	220	3	158	558	1501	38	103	71	48	368	274	437	79	1008	499	452	14	1	6,344
New Hampshire	August 5116	968	18187	2141	37	1257	4096	13016	430	1104	864	282	3207	1988	3513	749	8104	4384	2871	172	13	70,229
New Jersey	August 327	86	1102	162	3	101	286	1206	58	93	90	23	245	223	250	62	647	324	289	15	8	5,600
New Mexico	August 3969	722	11266	1450	55	887	2728	9630	531	1121	701	217	2533	1751	2444	611	5353	3183	1915	168	24	51,239
New York	August 313	66	1216	126	9	86	306	955	43	58	37	11	197	159	219	45	588	362	286	31	5	5,086
North Carolina	August 3017	581	10605	1198	40	701	2431	9137	378	546	317	127	1634	1175	2232	465	4824	2936	1764	256	38	44,400
North Dakota	August 251	69	1227	118	7	95	219	888	40	47	41	14	202	78	219	36	548	309	281	19	9	4,617
Ohio	August 2869	639	10255	1038	46	787	1904	8599	439	399	449	145	1706	530	1839	387	4674	2685	1787	190	34	41,101
Oklahoma	August 87	17	290	19	3	40	92	199	27	27	18	10	61	46	75	12	148	83	55	10	5	1,334
Oregon	August 1310	270	3546	449	36	364	972	2516	240	319	198	95	692	432	923	179	1966	1064	588	149	31	16,335
Pennsylvania	August 358	69	1359	146	6	103	375	1010	99	141	48	24	250	180	322	61	804	393	260	35	20	6,061
Rhode Island	August 3539	712	12789	1741	50	989	3160	9651	963	1274	451	272	2310	1411	2616	742	5562	3294	1990	239	163	55,108
South Carolina	August 908	239	2123	331	21	369	928	1788	122	270	118	82	584	437	783	149	1661	827	616	70	87	12,513
South Dakota	August 7483	1851	19950	3176	169	2814	6350	18621	938	1989	938	538	4415	2887	7382	1175	12891	6983	3888	513	517	102,201
Tennessee	August 1959	535	5519	589	12	597	1740	5898	212	450	307	184	1322	897	1566	214	3043	1877	968	41	64	27,874
Texas	August 20094	5607	57131	6113	88	4514	12879	54214	2583	4660	2694	1151	11194	5378	13739	2569	25484	19128	6570	822	202	256,824
Utah	August 520	177	2211	278	12	188	445	1593	42	104	84	25	304	220	419	132	1074	614	456	29	5	8,832
Vermont	August 6052	1264	19000	2766	33	1794	4662	14693	606	1396	1184	302	3226	1863	4016	1122	9683	5271	3438	242	61	82,684
Virginia	August 255	44	857	105	2	60	171	853	43	24	27	20	144	48	139	45	439	211	211	21	3	3,322
Washington	August 2495	423	7324	800	26	439	1321	5597	364	251	258	114	1300	383	1236	281	3521	1773	1199	124	20	29,229
West Virginia	August 578	181	2418	249	4	230	525	1971	69	98	58	38	476	416	401	94	1420	573	380	30	9	10,216
Wisconsin	August 6639	1472	24100	2769	60	2239	4805	17778	680	1174	808	385	4853	3545	4510	1051	12690	5591	2992	340	81	98,550
Wyoming	August 161	53	420	60	1	38	130	330	12	51	20	13	117	41	134	19	235	129	119	29	5	2,119
Alabama	August 1292	302	3855	580	12	310	924	2991	136	576	172	84	777	320	1020	250	1681	1063	778	220	5	17,308
Arizona	August 307	64	912	124	6	81	249	789	28	65	25	28	200	106	182	47	531	280	245	9	2	4,278
Arkansas	August 3344	684	8417	1314	42	591	1809	7718	185	791	370	178	1965	804	1826	517	4633	2782	1487	189	15	39,661
California	August 33	15	93	23	1	13	27	82	2	12	2	4	32	10	33	11	52	21	27	4	1	498
Colorado	August 332	127	617	216	6	83	233	662	23	100	28	34	254	65	239	142	464	211	243	40	4	4,333
Connecticut	August 91	22	257	27	1	27	95	207	29	24	14	7	51	56	77	22	136	86	60	25	13	1,327
District of Columbia	August 870	172	2783	296	15	174	706	1887	193	301	179	94	490	428	638	170	1231	857	482	150	64	12,138
Florida	August 1189	388	2776	516	19	428	1302	2400	234	337	190	105	837	469	831	252	1847	1255	771	118	86	16,350
Georgia	August 10041	2778	24046	4667	129	2684	8399	19651	2283	3012	1970	676	6372	3130	7327	2158	13613	9531	4872	947	649	129,933
Idaho	August 95	24	324	40	2	31	65	174	14	26	8	12	95	26	62	18	153	86	61	16	2	1,334
Illinois	August 1093	198	2576	378	29	222	578	1781	104	290	102	83	688	258	657	161	1116	846	571	123	11	11,669
Indiana	August 2839	940	6243	1102	38	1179	3125	4796	397	638	368	216	1587	1103	2107	447	3920	2458	1675	234	322	35,732
Iowa	August 25824	7192	58051	10941	294	9545	23559	44150	4014	6027	4029	1687	13343	7840	18302	5795	32488	21580	10897	2096	2494	306,148
Kansas	August 588	141	1724	159	12	159	422	1584	113	114	81	41	359	187	414	68	884	563				

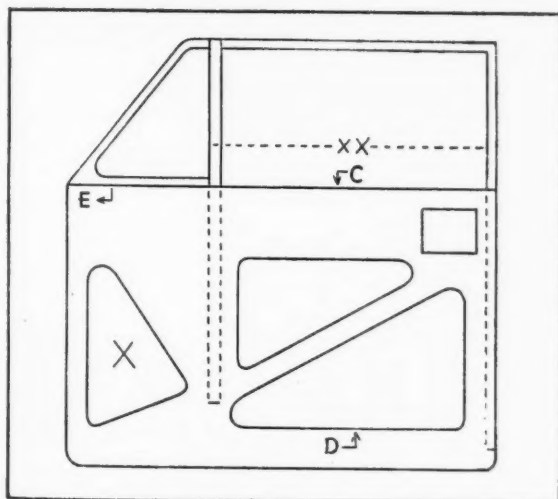




Other helpful information  
of this type is available  
in Chilton's Motor Age  
Body and Frame Manual



## Important Ideas and Methods to Help Modernize Your Body Business



### A Cure for Leaky Doors on Henry J. Cars

On the Henry J. doors which develop water leaks, I use waterproof paper. Measure at the double X in the sketch or about 26 inches wide and 29 inches long. Remove the inside window felt C. Slide the paper down and it should clear all working parts. Be sure the paper hangs below D parts, but extends two inches above C. Use the felt as a hanger and snap into place over the paper. You should have barely enough room to snap the felt into place. The opening shown at X can be done by leaving it open and sealing up the outside E, with an opening about three inches long. Use caulking compound and paint according to the car. *L. J. Duarte, Guiste & Campbell's, Pawtucket, Rhode Island.*

### Drilling a Hole to Pull Out a Dent

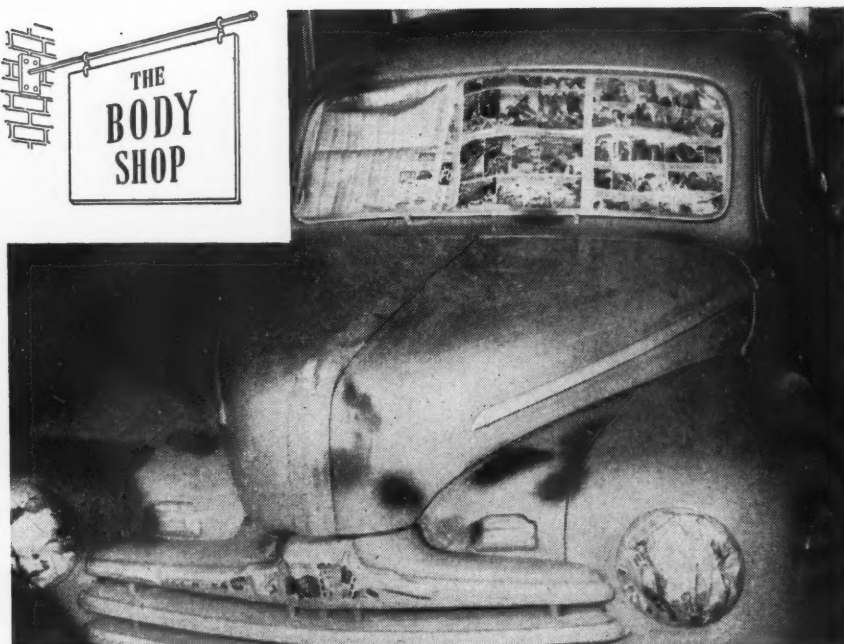
We have had several cases recently where "pop-out" dents have occurred in doors. To eliminate the removal of upholstery we use the following method. When the finish is scratched, as it usually is, we go ahead and drill a  $\frac{3}{8}$  inch hole and put in a square-headed, self-tapping bolt. It is easily gripped with clamp-on pliers, which can be used as a handle to pop out the dent. Then we fill the dent and refinish the door (which usually has to be done even on the most minor dents). *J. T. Chavana, 220 West 17th Street, Eugene, Oregon.*



### Metal Disk Used to Mask Off Wheels

After a paint job we spray the tires with a black tire preparation to enhance the appearance  
(Continued on page 114)

● Motor Age will pay \$10.00 for the best Body Shop Kink each month. Others at the regular rates.



The car ready for painting. No special preparation is necessary for hot spraying.

# Hot Tips on Hot

New equipment and methods for hot application of lacquer and enamel

by Arthur H. Nellen, Jr., Service Editor

**A** MAJOR development has taken place in the refinishing field—the hot spray method of applying lacquer and enamel. Many paint manufacturers now recommend this process for use in automotive body and fender refinishing because it enables a shop to apply finishing materials with savings in time and with excellent results. Here is why:

The reason for adding thinner to paint is that the materials must be of a low viscosity in order to properly atomize from the gun. Thinner, of course, reduces the solid content of the

material and consequently reduces the covering qualities. Heating the paint lowers the viscosity and therefore greatly reduces the amount of thinner necessary. In addition, spraying paint “hot” (150 deg F to 160 deg F) has several other advantages.

First, the surface can be sprayed in less time. Often a complete car can be sprayed at



Using the pot type heater, one of the several types available for shop use. Notice the faucet, which permits rapid filling of the cup.



One double coat, being applied fairly wet and heavy. The gun shown is of the pressure type, although the conventional gun is quite satisfactory for this work.

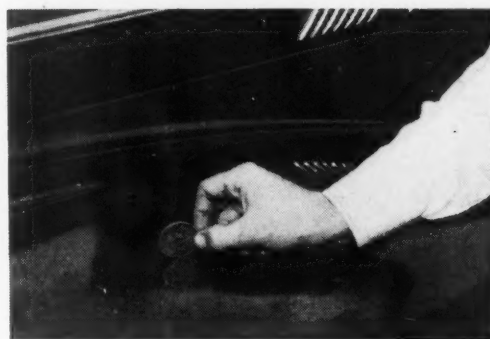
# Spray Painting

make this procedure practical for repair shops

Illustrations courtesy of Hercules Powder Company

once, without the need to dry between coats. With lacquer, one continuous cross coat of application around the car will complete the job, while with enamel one full coat is sufficient. There is no need to apply successive coats, with the time loss in between.

Both synthetic enamel and lacquer finishes, sprayed hot, dry dust free in 10 to 15 minutes



A completed hot lacquer job. This finish, virtually free of orange peel, has not been compounded or polished.

and are no longer tacky after  $\frac{1}{2}$  to  $\frac{3}{4}$  of an hour. In from three to four hours the car can be delivered, although compounding lacquer should not be done for 8 to 10 hours.

Lacquer, in many cases, doesn't need compounding, as a surface sprayed hot is virtually free of orange peel. Compounding and polish-

*(Continued on page 106)*



# Sixty-five Paint



**J**OHNIE & Mack started in business 18 years ago in one building doing wholesale paint jobs for automobile dealers. Today they have 12 buildings spread over parts of two city blocks in downtown Miami, Fla. A measure of the growth of their business in the paint department alone is this: In 1938, three years after they had started a small business, they were doing 10 or 12 paint jobs a day. By 1945 they were doing 30 a day. Now their average is 65 a day. Back in 1938 a paint job was sold for \$9.95; today the price is \$29.95, and only large volume enables them to maintain that figure.

In the paint department, which occupies an entire building, production line methods are employed. Workers are all specialists — no man does more than one job.

On busy days a paint job comes into the shop every eight minutes on the average. By early afternoon of the day of this interview, 49

jobs had been booked since 8 a.m. Johnnie & Mack's records are posted on a board in the paint shop. Such figures as these are there: 12,129

*(Continued on page 84)*

**Preparatory-to-painting department.** The cars have already been chemically cleaned and are now being masked, and primed.



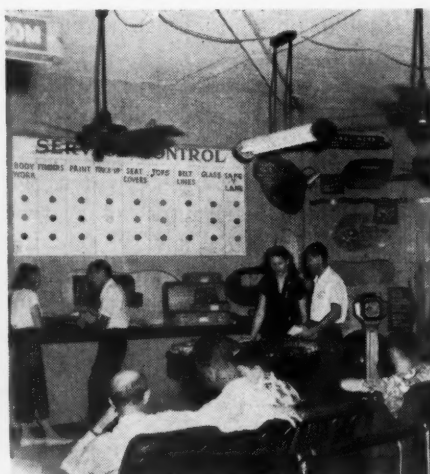
# Jobs A Day

are the department average in Johnnie and Mack's tremendous Miami shop—considered to have the largest shop volume in the country

by C. E. Wright

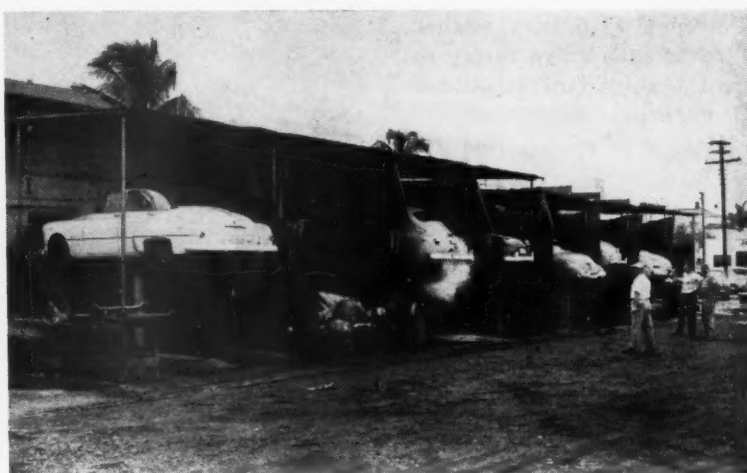
**BODY  
SHOP**  
continued on  
**Page 72**

The customer waiting room. Notice the service control board, and merchandise displays.



Partial view of one side of the sport top shop. This is another department which keeps busy all day long and offers quick service.

The undercoating department, which is less than two years old, has eight lifts, and usually keeps them all busy. The "no waiting" idea helps to sell undercoating.



# READERS CLEARING HOUSE

## A Few Tips on Souping Up a Plymouth

We have modified a 1950 Plymouth to enter in an automobile race. Do you have any suggestions in addition to the work we have completed?

### What We Did:

Installed larger intake and exhaust valves with 30 degree valve seats. Milled .062 off the cylinder head. Installed a  $\frac{3}{4}$  race camshaft. Rebores the motor to .020 oversize. Increased the exhaust pipe damper to 2½ inches all the way. Placed a 1/16 inch washer at the top of each valve spring to increase the valve tension. Added a dual manifold. Submitted by: Mixon Motors Company, Kenedy, Texas.

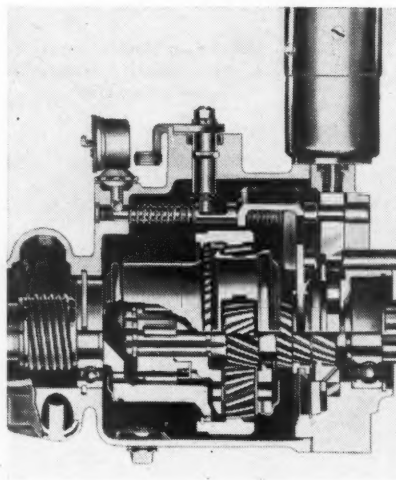
### We Suggest:

Enlarge the exhaust ports in the block and remove all the sharp edges inside the combustion chamber and the inlet ports. Install a high capacity coil and condenser and set the points to .015 in. Also set the centrifugal and vacuum advance, using a reliable distributor tester. Set the spark plugs at .025 inches. Since you did not men-

tion anything about the rear axle, I would also suggest installing a higher gear ratio.

## Packard Sometimes Won't Go Out of Overdrive

We have a 1947 Packard on which the overdrive is giving us trouble. It works O.K. when in O.D. but it is impossible to get it out of O.D. at times.



### What We Did:

Checked the switches and changed the lubricant without any success. Submitted by: Al's Auto Service, Glenside, Pa.

### We Suggest:

Since the unit works O.K. when in overdrive, the trouble probably lies in the solenoid pawl. If this pawl sticks in the sun gear plate, it is impossible to pull the manual control out. Remove the solenoid and fish out the pawl. Clean it in a good solution, reinstall it, and your trouble should be eliminated.

## Buick Smokes After It Sits a While

Every time a 1941 Buick in our shop sits awhile and then is started up, out comes a buff of blue smoke.

### What We Did:

We did a complete valve job about two years ago and at that time we installed a valve packing on the intake valves. But the car doesn't seem to be using too much oil. Submitted by: Haskell Natow, 610 Marcy Avenue, Brooklyn, N. Y.

### We Suggest:

I am inclined to believe that this blue smoke comes from the oil running down the exhaust

## Trouble

• Tips on souping up a Plymouth

• Overdrive trouble on Packard

• Buick smokes after it sits

• Ford starts hard when hot



# Shooting Problems

- 1949 Buick wiring diagram
- Mercury jumps out of gear
- How to increase Pontiac power
- Buick plugs on low octane

by Jack Montgomery, Technical Editor



valve stems. Even though the valve packing was installed, when the car sits it is still possible for a slight amount of this oil to get

down the stems while the car is parked. Along with what you have already done, I would suggest that you install a deflector over the

rocker arm shafts, which can be purchased from your Buick parts department. Changing the intake manifold will definitely help your car but I don't believe it has anything to do with the blue smoke.

## Ford Starts Hard When Engine Is Hot

We have a 1951 Ford which has been hard to start when hot since the car was new. It starts fair when the engine is cold.

### What We Did:

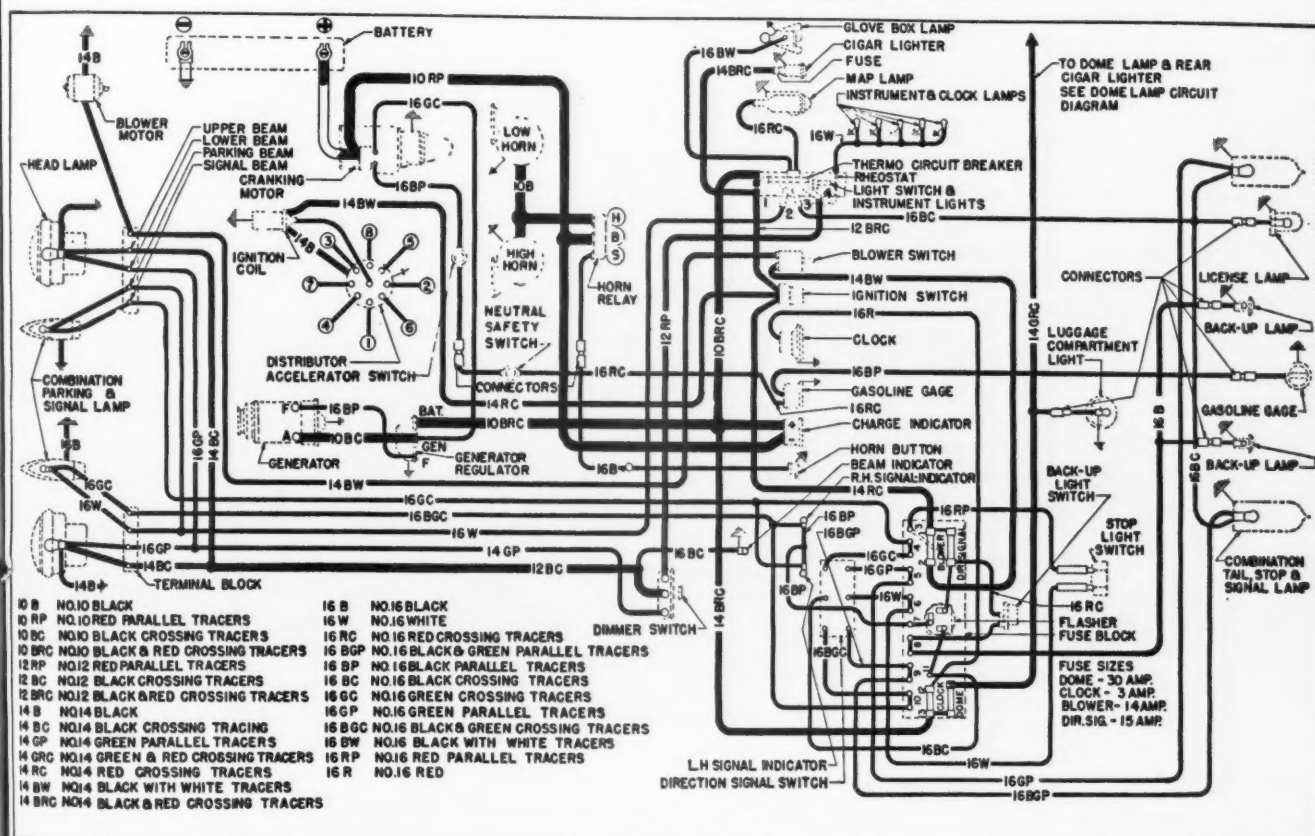
Installed three different carburetors, new coil, but no help. It still acts like it is flooding. Submitted by: Frank Cloukey, Cloukey's Garage, West Enfield, Maine.

### We Suggest:

Usually when hard starting exists when an engine is warm, it is either due to a poor ground or sometimes by the float level being a little high. I would suggest checking the battery terminals, making sure they are tight, and also the engine ground. Then check the float level.

(Continued on page 116)

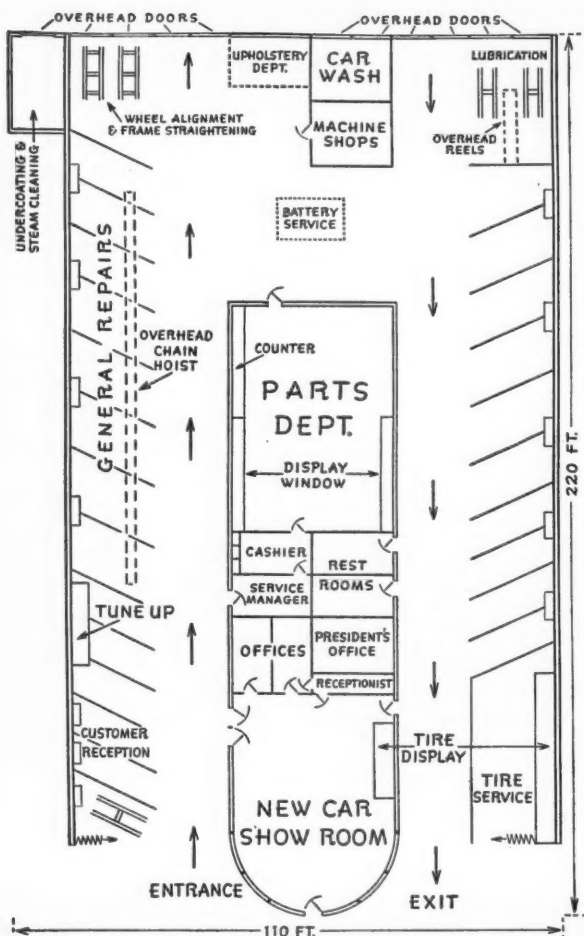
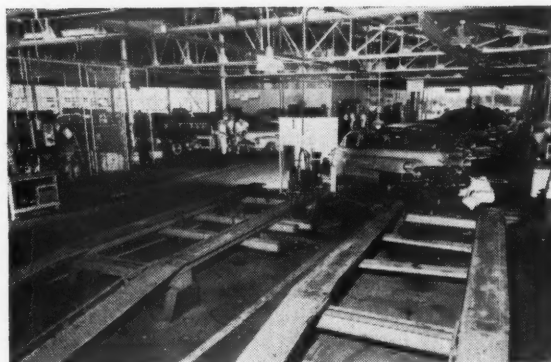
Wiring diagram for 1949 Buick Series 50-70 Sedan with Dynaflo



# FLOOR PLANS

FOR BETTER SERVICE

## Free Traffic Flow Speeds Service



**T**HE shop of J. Saxton Lloyd's Daytona Motor Co. Buick-Cadillac dealer in Daytona Beach, Fla., provides for minimum congestion. All cars enter from the left, where three service salesmen are stationed. They have a lift of their own, which is used exclusively for diagnosing troubles. Tune-up and general services are performed in the three bays on the left side (facing the rear of the shop). Two frame straightening and alignment machines are situated at the left rear. The location of these is such that all maneuvering onto the ramps can be done from the outside of the building on the street. This saves shop space and reduces traffic tie-ups.

A separate room on the outside of the building is used for undercoating and steam cleaning. All the dirt which accompanies these operations is confined to this space.

The body and paint shop is located several blocks from the main building.

The center aisle of the shop at the rear contains a fully equipped upholstery department in which all types of repairs and custom-made seat covers are made. Adjacent to this is the car wash department, which has an automatic washing unit. Management claims that time as well as water are saved with the machine, thus adding to the profits of this department.

The machine shop is fully equipped for everything from valve grinding to complete engine rebuilding.

(Continued on page 90)



**It's riding high  
on a tremendous wave of  
public approval**

*The far-advanced new*

# **120 H.P. STUDEBAKER COMMANDER V-8**

**Outstanding in gas saving!**



# Shop Kinks



**\$25**

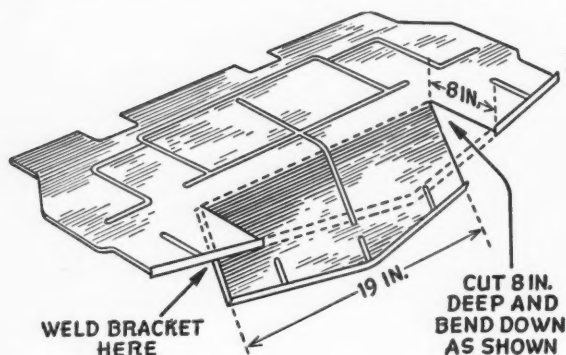
**FOR THE BEST KINK  
PUBLISHED  
EACH MONTH**

**\$7.50**

**FOR ALL KINKS  
PUBLISHED  
EACH MONTH**

If you've come upon an original idea for making a job easier, a special tool, short cut on a job or any trick of value to other readers, write it down and, if necessary, make a rough sketch. Just make it clear. Send it to Motor Age. If we can use your Kink it may bring seven-fifty, possibly 25 dollars.

## Best Kink of the Month



### Extra Air Intake Beats Overheating

We have overcome a heating problem out West on 1951 Buicks. We find that this overheating is due to the reduced air space at the front of the radiator. We add an air scoop by reworking the splash pan as indicated. After the pan is bent, weld gussets at each end to support it. This change makes 38 sq. inches of extra air intake area. *Wm. E. Anderson, 442 Pine Street, Modesto, California.*

### Quick Repairs to Worn Windshield Wiper Linkage

Here is a quick repair for a ball and socket joint of some windshield wiper linkage when it wears to the extent that the ball and socket separate. The last few I have repaired were on 1941 Buicks and it works very well. Remove the arms and then drill about a 3/32 in. hole through the center of the ball and socket. Make two washers from thin sheet metal and drill the same size hole as in the ball and socket. Place the arms back into position

and insert the cotter pin with a washer on each end and bend. The job is complete. *Moses Garage, 503 East King Street, Garrett, Indiana.*

### Try This When Oil Pan Plugs Won't Back Out

We have run into quite a few oil pan drain plugs that have been run up past the thread travel when the thick gaskets compress. The plug turns freely enough but won't back out. To remove these plugs without pulling the pan, we took a steel

Chevrolet truck front spring shim, which is tapered, and cut a slot down the middle. By driving this wedge behind the plug and pulling the plug with tension, the plug can be easily backed out with a wrench. *E. F. Moore, Jr., 12th Ave. & Fayette Street, Conshohocken, Pa.*

### Adjusting Chevrolet Valves With Hydraulic Lifters

On Chevrolet motors that have hydraulic valve lifters, we have a  
(Continued on page 60)

# caught

WITH OUR PLANS DOWN!

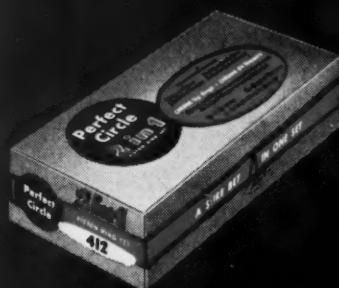
**YES, OUR PRODUCTION PLANS** for the 2-in-1 Chrome Piston Ring Set were way down! No one anticipated that the 2-in-1 design and performance features would be accepted by mechanics everywhere... with such immediate enthusiasm that our extensive production facilities would be inadequate.

**NOW**, it is quite obvious that our engineers were so right when they designed two springs for the 2-in-1 Set, so that mechanics could choose the pressure best suited for the engine after they looked at the cylinders.

**SO RIGHT, TOO**, when they offered the double protection of solid chrome on both the oil and top compression rings... when they developed the set that would last over twice as long in cylinders that were straight or tapered, round or out-of-round, slightly or badly worn!

**BUT WE HAVE PULLED OUR PLANS UP!** Current plant expansion will soon make it possible to obtain 2-in-1 Sets every time, on time!

## Perfect Circle



*The Standard of Comparison*

## Shop Kinks . . . . . Continued from Page 53

method of adjusting the valves while the motor is running and the valves are hot. Use a .002 feeler gage and adjust to .002 clearance. Then tighten the adjusting screw one and a half turns. This is Chevrolet specifications. We found this method most accurate and that the motor will smooth out and idle better this way. *Leslie G. White, Caperton Chevrolet Co., North Locust Street, Lawrenceburg, Tenn.*

### Easy Remedy for Sticking Overdrive Pawl

When the overdrive pawl is determined to be the cause of locking in reverse, this tool will save many hours of labor. Take an old overdrive solenoid and cut off the shaft. Weld four inches of  $\frac{1}{4}$  in. rod extension to it and the shaft insert into the pawl. When the solenoid is removed, the shaft will usually free up the pawl without removing the overdrive assembly from the car. Neglect of changing grease usually is the cause of the pawl's binding. *R. J. Reid, 608 West 17th Street, Lorain, Ohio.*

### Interchanging Parts on a Chev. Front End Job

I have found that the spindles on Chevrolet 1939 through 1948 where the king pin bushings fit are sometimes worn and it is necessary to replace the spindle. I purchased four new pin bushings from a 1940 Packard king pin set, and put them in instead of the Chevrolet bushings as they are .007 larger than the Chevrolet bushings and this takes up the play where the spindles are worn. This saves the day when you can't get new spindles. *Bill Devereaux, 230 Buffalo Street, Freeport, Pa.*

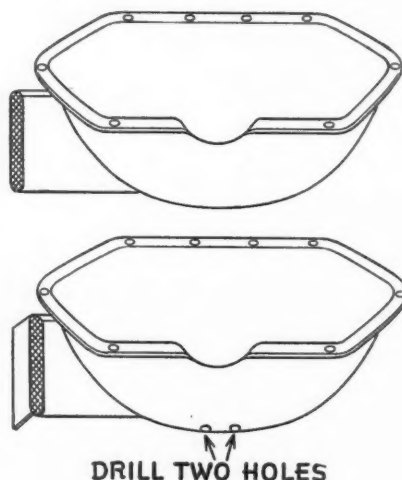
### Circuit Breaker Replaces Fuse and Brightens Lights

A 10 per cent drop in voltage will result in a 30 per cent drop in candlepower at the headlights. I have found as much as 20 per cent voltage drop through the headlight switch fuse block assembly. To

cure this, inexpensively and permanently, install a Mopar circuit breaker No. 1257556, using #10 wire to one side of the breaker and hooked to the input side of the switch. Then hook the hot lead to the other post of the circuit breaker. The unit also has a bracket for bolting to the dash or any handy place. The extra brilliance of lights will more than please the customer, plus eliminating the chances of blowing fuses through any light circuit and having to fumble in the dark to replace them. *Claire Ellsworth, 121 South Park Street, Eagle Grove, Iowa.*

### Remedy for Stiff Clutch Pedal on Dodge Pickups

On Dodge pickups with Fluid Drive when clutch pedal action is stiff, remove the clutch fork and release bearing and the clutch disc and the pressure plate. Then clean the parts and re-install them using a new clutch release bearing. Dirt, mud and sludge on these parts,



particularly on the release bearing, is caused by the Fluid Drive vent opening being located and shaped like it is. It is directly behind the right front wheel when the wheel turns to the right, thereby making a funnel for dust, mud, and sludge to enter the clutch housing pan. We remedied this situation by cutting off about two inches of the back portion of the vent opening and cutting just enough off of the

front portion to make a smooth weld. Then weld a piece of light 1 in. x 2 in. angle iron  $5\frac{1}{2}$  inch long to the front of the vent thereby making the vent opening at the rear. We also cut two  $\frac{1}{2}$  inch holes in the bottom of the clutch housing pan for drain holes. *V. W. Newman, Shuffield and Townsend, 114 W. Lockhart, Brady, Texas.*

### How to Prevent Distributor Caps From Blowing Off

I had a lot of trouble with a 1949 Dodge distributor cap blowing off after putting on a new vacuum advance and bending the clips on the cap. I took the vacuum advance tubing and cut the tube and put a piece eight inches long onto the end with a coupling fitting and then I bent the tubing so it came over the top of the gas line. It hasn't blown off since. *S. Weiss, Weiss Service Station, Bayville Avenue, Bayville, N. Y.*

### Deflating Blow-out Proof Inner Tubes in a Hurry

Remove the valve core and install a vacuum line from the intake manifold to the tube. Then start the engine and the tube will collapse. This makes tire changing on blow-out tubes much easier. *Walter A. Weigle, Weigle Brothers, 28 North 55th St., Philadelphia, Pa.*

### Quick Repair for Broken Cables

I have a way to repair broken brake cables. Take a  $\frac{1}{2}$  inch cap screw, one inch long and drill two holes through it, very close together. Make these holes the same diameter as the brake cable or larger. File the metal out between the holes. Then cut off the unraveled ends of the cable and insert both ends of the cable through the cap screw. Run on the nut very tight, holding the cap screw with one wrench and tightening the nut with another. The cable cannot slip once the nut is securely tightened. Also shorten the stretched cables on the Ford cars up to 1939 models the same way. All this work can be done in a very short time giving permanent repair. *Karl J. Berger, Route #1, Juneau, Wisconsin.*





## "Big, easy profit deals also have a catch..."

*"Any time someone offers you a parts deal where there is a big, fast profit, you can be sure there's a reason. There has to be. People aren't giving money away. Those outfits that produce substitute replacement parts have nothing to lose and if anything goes wrong, it's your reputation for honest workmanship that always takes the beating. That's why I'm sticking strictly to Original Factory Parts that have been tested and proven right by the car manufacturer."*

J. J. Austin, 616 Marshall, Memphis, Tenn.

The outstanding customer satisfaction Auto-

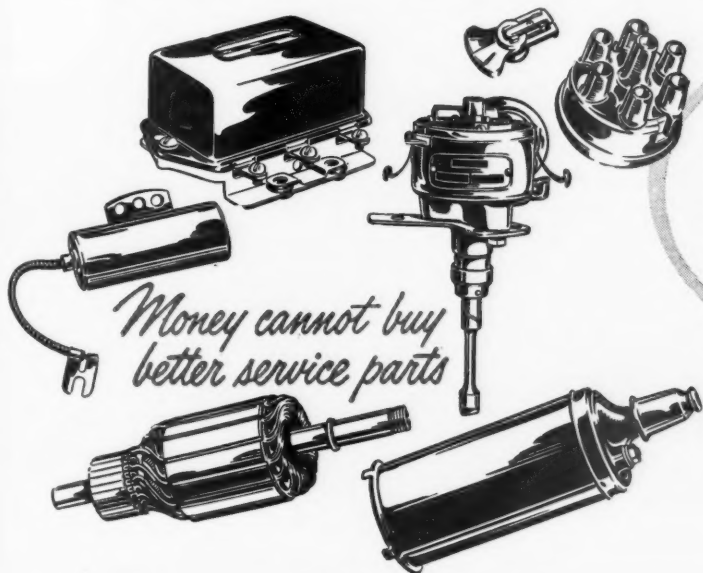
Lite Original Factory Parts afford service men is proved by this fact: more than half of America's car makers specify Auto-Lite. Make the wise choice of original factory parts and protect your honest workmanship . . . and build your business, your reputation and your profits. For full information, write to

THE ELECTRIC AUTO-LITE COMPANY

Toledo 1

Parts & Service Division

Ohio



*Money cannot buy better service parts*

"Tested Quality" HELPS YOU DELIVER  
AMERICA'S FINEST ELECTRICAL SERVICE

From blueprint to finished product, constant inspection and testing of all Auto-Lite Original Factory Parts assures quality of unfailing dependability . . . and is proven by exhaustive tests of leading automotive engineers who specify Auto-Lite as Original Factory Equipment on leading makes of many of America's finest cars and trucks.

ORIGINAL  
**AUTO-LITE**  
SERVICE PARTS

TUNE IN "SUSPENSE" . . . CBS RADIO MONDAYS . . . CBS TELEVISION TUESDAYS



# NEW PRODUCTS

FOR FURTHER INFORMATION USE

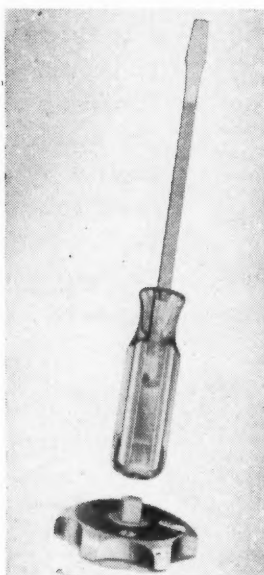


## ▲ 425. Cooling System Filter

Butler Engineering Company, Inc., is manufacturing the Butler Water Filter, designed for installation in the cooling system to remove particles of scale, dirt, rust and sludge that clog the water channels. The filter has a rectifier section which removes and prevents formation of mineral and rust and stops corrosion. The filter section collects the sludge in a glass chamber where it is easily removed. The core is designed for easy replacement, and the Visibowl is drained by removing the plug or opening the drain cock. The unit can be mounted either on the engine proper or on the dash.

## ▼ 426. Ratchet Screw Drivers

Kipton Industries is announcing a new line of Palm-Grip Ratchet Screw Drivers. The tool has a three-position standard  $\frac{3}{8}$ -inch drive ratchet that can be changed with a click of the finger. The special design is said to permit direct, even pressure and maximum leverage on every application. These tools are available with regular, Phillips and Clutch head blades.



## ▼ 427. Engine Heater

Five Star Manufacturing Company is marketing the Freeman Headbolt Engine Heater. This contains a 650-watt immersion type heating element, wired through the radiator grille to plug in with an extension cord in the garage. The element extends down into the water jacket. The car owner can switch it on inside his house before breakfast so that the engine is warmed up before being started.



# SHOW WINDOW

POSTCARD FACING NEXT PAGE

## ► 428. Pin Fitting Machine

The Van Norman Company is featuring the No. 232 Pin Fitting Machine, known as the "Pin Shop." This machine can be used for reconditioning rods, boring wrist pin holes, boring piston and bearing holes parallel, and finish boring semi-finished babbitted rods.

## ▼ 429. Valve Spring Chart

Rinck-McIlwaine, Inc., have published a valve spring tension chart which includes correct tensions for passenger cars, trucks and tractors from 1950 to 1951.

## ▼ 430. Delivery and Service Car

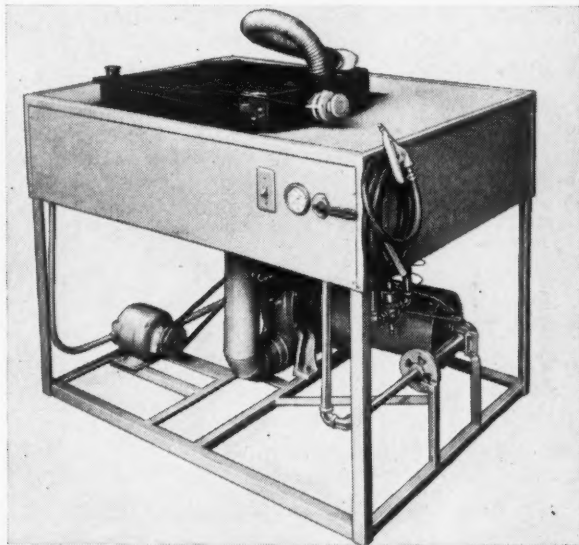
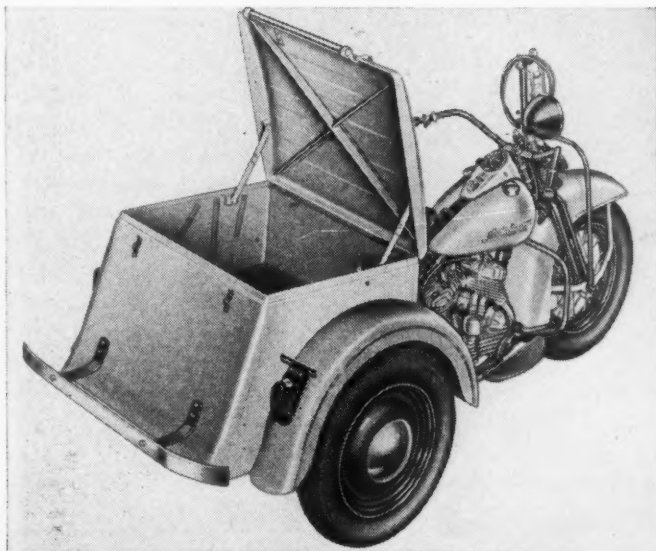
Harley-Davidson Motor Company announces the 1952 Harley-Davidson Servi-car with a heat treated steel tow bar. This model is outfitted for car pick-up and delivery. The three-wheeler has a body load capacity of 500 pounds and is said also to lend itself for such duty as tire and battery service calls, small parts pick-up, and so forth.



## ▼ 431. Radiator Tester

Inland Manufacturing Company is producing a new machine called the Inland Radiator Leax-Exposer. This product is said to reduce time and save customer comebacks by locating tiny radiator leaks not found by ordinary testing methods but which show up again after the radiator is placed back in service. The tester operates by drying the inside of the radiator before testing is begun. Then the leaks are found by the application of air pressure.

(Continued on page 64)

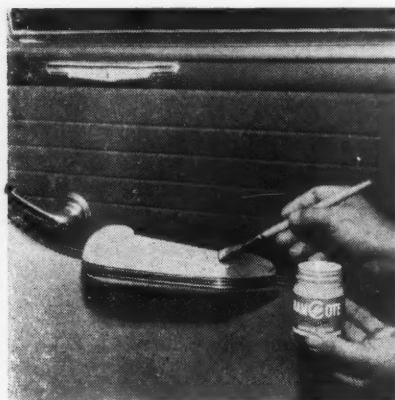




## New Products . . . . . Continued from Page 63

### 432. Leather Coating

Ramcote Products announce a flexible coating for use on leather, leatherette or canvas areas on automobiles. Applied like paint, Ramcote is claimed to produce a tough film (colored or clear)



which provides a new surface which is as flexible as the leather over which it was used. The manufacturer further states that it is fast drying and self-leveling.

### 433. Electrical Tester

Sun Electric Corporation is featuring its 1952 line of Testers. Heading the list of new equipment is the Model CB Volts-Ampere Tester, which is said to be accurate within 4/100 of a volt. It has a built-in calibrating device that permits on-the-spot calibration of the tester at any time, before, during and after use. It's used for testing generators, regulators, ignition circuits, light circuits, horns, relays, ignition switches, light switches, heaters, motors, etc. Other important Sun developments are a new Power Timing Light that automatically adjusts itself to 6, 12 and 24 volt batteries, a new 6 volt timing light.

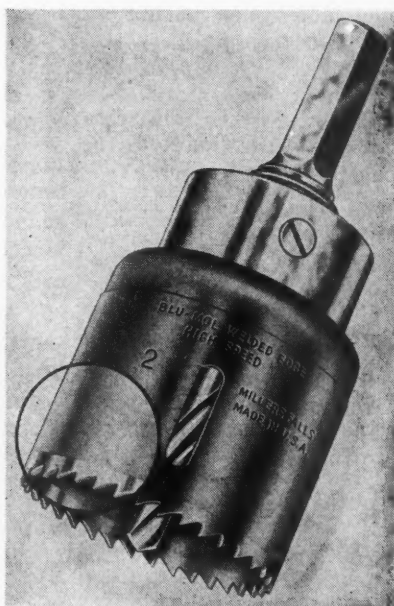
### 434. Anti-Rust Paint

The Monroe Company, Inc., have developed Rust Cure, the new anti-rust paint which can be applied right over rust without wire brushing, scraping or sand-blasting. Available in black, aluminum and clear, Rust Cure is said to be suit-

able for both interior and exterior use on either old or new metal. It is said to penetrate through any existent rust layer and effectively seal the surface against further rust action. It is compounded for brush application and may be thinned for spray use. The firm states that Rust Cure Aluminum has almost twice as much aluminum pigment as ordinary paints and gives an exceptionally brilliant finish coat.

### 435. Hole Saw

The Miller Falls Company is marketing a new line of high-speed, heavy-duty, follow-through type hole saws in sizes up to 4½ inches in diameter. Holes to a depth of 1½ inches may be cut in solid stock, the manufacturer states, with the "Blu-Mol" hole

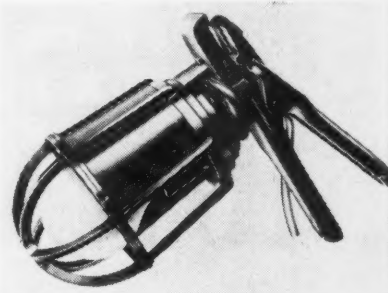


saw. Since the body of this saw is slightly smaller than the cutting diameter, the complete tool follows through the hole it cuts. These tools can be used in portable power drills with ¼ inch chuck for the smaller sizes, ½ inch or larger on the bigger saws.

### 436. Portable Lamp

P. M. Sales Company is offering the S.R.-3 "high volt" portable hand lamp, which features a

gripper fastener, and has a guard made of Tenite. The lamp, the first in the line of "Gripperline," has gripper jaws which permit the lamp to be clamped at the work position, to wood, pipes, cowl, or



any surface edge up to 1½ inch thick. The manufacturer states that a strong spring tension makes the lamp clamp on and stay on in the desired position.

### 437. Top Oil

Universal Lubricating Systems, Inc., is producing a new top oil which is said to promote efficient lubrication of the upper cylinder area of gasoline and LP gas engines. Known as Universal Top Oil, it is claimed to dissolve the sludges, resins, gums and varnishes which form in upper cylinders. Universal Top Oil is claimed to assure proper functioning of rings, valves and hydraulic valve lifters, and to eliminate pre-ignition. Special inhibitors help prevent the formation of rust and oxidation products.

### 438. Powdered Lube

Betterby, Inc. announces the new powdered lubricant called Grafize, now available for shop use. This product works like graphite. It is not an oil and will not freeze or soil, the manufacturer states. It is applied with a new type refillable rubber applicator and can be blown dry into any moving part. It also can be applied by mixing with lubricating oils or greases for increased lubrication protection. The manufacturer also points out that Grafize does not have the black characteristics usually associated with graphite.

(Continued on page 66)

rd  
ne  
,"  
ne  
rk  
or

ch  
es  
es  
in

as,  
bil  
nt  
er  
n-  
op  
he  
r-  
yl-  
is  
n-  
lic  
re-  
lp  
nd

he  
ed  
op  
ke  
ill  
ac-  
a  
li-  
to  
be  
ng  
ri-  
ac-  
ize  
ac-  
ith

66)

951

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462



HERE'S HOW TO GET

# Free Information

Here is a recap of the New Products described in this issue, along with their code numbers.

On each of the postage-paid postcards below you can request further data on items described in this New Products section. Fill out one of the sections completely for each item in which you are interested.

- 425. Cooling System Filter
- 426. Ratchet Screw Drivers
- 427. Engine Heater
- 428. Pin Fitting Machine
- 429. Valve Spring Chart
- 430. Delivery Service Car
- 431. Radiator Tester
- 432. Leather Coating
- 433. Electrical Tester
- 434. Anti Rust Paint
- 435. Hole Saw
- 436. Portable Lamp
- 437. Top Oil
- 438. Powdered Lube
- 439. Paint Additive
- 440. Spark Booster
- 441. Promotion Material
- 442. Electric Drill
- 443. Battery Filler
- 444. Piston Ring Set
- 445. Battery Ring Set
- 446. Winter Front
- 447. Hose Connector
- 448. Upper Lubricant
- 449. Electric Wiper Motors
- 450. Snow Plow Lift
- 451. Lamp Display
- 452. Bearing Catalog
- 453. Spur Gear Holst
- 454. Radiator Cleaner
- 455. Hot Spray Booklet
- 456. Ratchet Set
- 457. Test Equipment
- 458. Body Jack Tubing
- 459. Wiper Blades
- 460. Gasket Book
- 461. Paint Heater
- 462. Rubber Lubricant

USE THESE POSTCARDS

<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>
<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>
<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>
<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>
<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>
<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>	<p>Name ..... 11/51 Title ..... Company ..... Co. Address ..... Chilton's MOTOR AGE, Phila. 39</p> <p>Write in the number of the product about which you want more information</p>

## 439. Paint Additive

Tone Manufacturing Company has developed a new product known as "Fish Eye Killer," which is said to eliminate "fish eyes" resulting from painting over silicone polished auto finishes. This is a paint additive that is claimed to eliminate solvent washings, wet sandings and other time-consum-

ing tasks. An eye-dropperful of the product placed in a pint of standard hot or cold lacquer or standard enamel dissolves almost instantly by slight agitation without changing the color or affecting the lacquer or enamel in other ways. The firm further states that one ounce of the substance will treat approximately 28 pts.

## 440. Spark Booster

The Schauer Manufacturing Corp. is marketing a new model "Kar-Start," a device which is said to make possible fast starting of the car, truck, or bus engine, regardless of weather conditions. With this unit connected to the ignition system, pressing the starter causes the Kar-Start to send five times the normal amount of spark to the plugs. The manufacturer claims it will not damage the plugs or distributor and is used for starting only, automatically disconnecting when the engine is running.

## 441. Promotion Material

Purolator Products, Inc., announces the Fall dealers' sales promotion package which will tie in closely with Fall consumer and trade advertising campaigns. The package consists of a large Abbott & Costello counter display based on the same "shock treatment" theme that has been used in Purolator consumer advertising this year. The package also contains a full color window streamer urging a Fall filter check-up, a stuffer for direct mail, bills and so forth, and a window or wall poster which gives the dealer the three most successful points on Micronic filters, for use with his customers.

## 442. Electric Drill

The Black & Decker Mfg. Company announces the new model of the 1/4-inch Holgun Drill. Among its features are full-sized ball bearings, heat-treated gears, splined gear shafts and smooth contour aluminum housings. The tool weighs 3 1/4 pounds, and the standard speed unit has a no-load speed of 1700 R.P.M. The low speed unit has a no-load rating of 600 R.P.M.

## 443. Battery Filler

E. Edelman & Company is producing a new battery filler designed to get into hard-to-reach places. It has a semi-flexible stem made of soft rubber which is said to bend to pressure and spring

(Continued on page 120)

FIRST CLASS  
PERMIT No. 18  
Sec. 34.9, P. L. & R.  
Philadelphia 39, Pa.

### BUSINESS REPLY CARD

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

**Chilton's MOTOR AGE**

Chestnut and 56th Sts.

Philadelphia 39, Pa.

Attention: Frank P. Tighe, Editor

FIRST CLASS  
PERMIT No. 18  
Sec. 34.9, P. L. & R.  
Philadelphia 39, Pa.

### BUSINESS REPLY CARD

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

**Chilton's MOTOR AGE**

Chestnut and 56th Sts.

Philadelphia 39, Pa.

Attention: Frank P. Tighe, Editor

FIRST CLASS  
PERMIT No. 18  
Sec. 34.9, P. L. & R.  
Philadelphia 39, Pa.

### BUSINESS REPLY CARD

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

**Chilton's MOTOR AGE**

Chestnut and 56th Sts.

Philadelphia 39, Pa.

Attention: Frank P. Tighe, Editor

g  
el  
d  
of  
o-  
s.  
e  
e  
to  
nt  
u-  
ye  
is  
ti-  
n-

nl  
n-  
es  
tie  
nd  
he  
ge  
ay  
at-  
ed  
ng  
on-  
ner  
a  
nd  
all  
the  
on  
his

om-  
of  
ong  
ball  
ars,  
oth  
The  
the  
oad  
low  
g of

pro-  
de-  
each  
stem  
said  
ring  
(120)





N  
S  
[  
•  
2  
C  
i  
t  
c  
t  
J  
t  
a  
i  
e  
c  
c  
I  
S  
b  
s  
d  
s  
y  
s  
i  
d  
t  
t  
s  
n  
c



# Chilton's MOTOR AGE

## Flat Rate and Service Manual

### S e r v i c e S u g g e s t i o n s

The information presented here has been compiled from the Factory Service Bulletins, as an additional service of Chilton's Motor Age Flat Rate and Service Manual Department.

Selected by William H. Lutton

Assistant Editor

Chilton's Motor Age Flat Rate and Service Manual

#### Tip on Plymouth for Honing Or Boring #6 Cylinder

You may encounter difficulty or interference sometimes, when attempting to use reboring or honing equipment on No. 6 cylinder, from the cowl ventilator drain tube on the engine compartment side. If you meet such interference remove the portion of tube necessary with a hack saw, and if additional space is required due to the type of equipment, the hood support plate can be unscrewed and removed out of the operator's way.

#### Brake Drum Silencer Springs for Pontiacs

Numerous cases of squeaking brakes can be corrected by the installation of springs over the brake drums. A brake drum silencer spring package is available now at your supplier; and it contains 2 springs and 6 spring retainers, and is adaptable for either front or rear drums.

You should make 4 installation tools to assist you in installing these brake drum springs.

The brake drum silencer springs should be installed in the following manner:

1. Remove the wheel.

2. Install tools over wheel studs and secure with wheel stud nuts.

3. Place the spring on the drum.

4. Roll spring along drum to drum flange. Lift spring with screw driver and place three clips under spring approximately 120 degrees apart.

5. Remove the installation tools and replace the wheel.

#### New Rocker Arm Adjusting Screw for Studebaker V-8

If you should encounter cases of reported excessive valve clearance developing in the Studebaker Commander V8 engines, it may be caused by wear in the push rod sockets of the rocker arm adjusting screws. This condition would result from the screws not being properly heat treated.

This premature wear has been found in the rocker arm adjusting screw of the type shown in

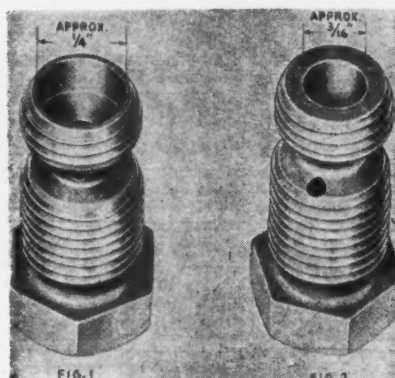


Fig. 1 of the illustration. It has not as yet been found in the type of Fig. 2 of the illustration.

If you do have the condition of repeated excessive valve clearance occurring, then examine the rocker

arm adjusting screws and replace all of the Fig. 1 type.

You may order the rocker arm adjusting screws under Part No. 529400 and any of the screws you may receive from the parts department now, regardless of the type, will have been properly heat treated.

#### Propeller Shaft Center Support Bearing Shields

Failure of the Studebaker propeller shaft center support bearing, due to the entrance of mud, sand, water, etc., can be prevented by the installation of bearing shields, Part numbers 531016 and 530421.

On the 1950 Champion 9G and the Commander 17A models, maximum protection can be had with the installation of two (2) Part number 531016 shields, one each side of the bearing. At the same time it will be necessary to replace the original dust shield Part number 523000 with a new type shield, Part number 530421.

1951 Champion 10G, and Commander H Models prior to Serial numbers G-1040035 and 8129491, respectively, were equipped with just one dust shield, Part number 530421. After these above mentioned serial numbers, one shield, Part number 530421 and one shield, Part number 531016 were used.

If additional protection against dust, sand, water, and so forth, is desired in view of extreme operating conditions, then one or two additional shields, Part number 531016, can be installed as necessary so that there will be one shield on each side of the bearing.

# Current Engine and Tune-up Specifications

68

MAKE AND MODEL	ENGINE						TUNE-UP DATA										STEERING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	Wheelbase (In.)	No. of Cylinders, Bore and Stroke	Tappable H.P.	Piston Displacement (Cu. In.)	Maximum Brake H.P. (at Specified R.P.M. with Bare Engine)	Compression Ratio	Spark Plug and Type	Rings		VALVES				IGNITION			Caster (Deg.)	Camber (Deg.)	Toe-In (In.)	King Pin Inclination (Deg.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
								No. and Width	No. and Width	Inlet	Exhaust	Seat Angle	Steam Diameter (In.)	Operating Tappet Clearance		Inlet Valve Timing					Timing		Breaker Point Gap	Spark Plug Gap	Timing		Rods Removed From Crankcase Capacity, Refill (Qts.)	Cooling System Capacity (Qts.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
														Inlet	Exhaust						Timing Marks	Timing Marks																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

\*—Depression in Carburetor Gear  
 \*—Do not recommend using a dwell  
 \*—Do not use for checking point opening  
 \*—Used with Powerglide transmission at  
 extra cost.  
 †—250 Model = 127"; 300 Model = 127".  
 ‡—Model 61—123; 62—126; 60—150 in.  
 (a) Top Ring 1/2; Middle Ring 1/4  
 (b) Auto-Lite 1/2; AC 1/4; Champion 1/4  
 (c) Upper Ring 1/2 in.; Lower Ring 1/4 in.  
 (d) Top Ring 1/2; Bottom Ring 1/4  
 (e) Top Ring 1/2; Bottom Ring 1/4  
 (f) Top Ring 1/2; Bottom Ring 1/4  
 (g) Top Ring 1/2; Bottom Ring 1/4  
 (h) Top Ring 1/2; Bottom Ring 1/4  
 (i) Top Ring 1/2; Bottom Ring 1/4  
 (j) Top Ring 1/2; Bottom Ring 1/4  
 (k) Top Ring 1/2; Bottom Ring 1/4  
 (l) Top Ring 1/2; Bottom Ring 1/4  
 (m) Top Ring 1/2; Bottom Ring 1/4  
 (n) Top Ring 1/2; Bottom Ring 1/4  
 (o) Top Ring 1/2; Bottom Ring 1/4  
 (p) Top Ring 1/2; Bottom Ring 1/4  
 (q) Top Ring 1/2; Bottom Ring 1/4  
 (r) Top Ring 1/2; Bottom Ring 1/4  
 (s) Top Ring 1/2; Bottom Ring 1/4  
 (t) Top Ring 1/2; Bottom Ring 1/4  
 (u) Top Ring 1/2; Bottom Ring 1/4  
 (v) Top Ring 1/2; Bottom Ring 1/4  
 (w) Top Ring 1/2; Bottom Ring 1/4  
 (x) Top Ring 1/2; Bottom Ring 1/4  
 (y) Top Ring 1/2; Bottom Ring 1/4  
 (z) Top Ring 1/2; Bottom Ring 1/4  
 (aa) Top Ring 1/2; Bottom Ring 1/4  
 (ab) Top Ring 1/2; Bottom Ring 1/4  
 (ac) Top Ring 1/2; Bottom Ring 1/4  
 (ad) Top Ring 1/2; Bottom Ring 1/4  
 (ae) Top Ring 1/2; Bottom Ring 1/4  
 (af) Top Ring 1/2; Bottom Ring 1/4  
 (ag) Top Ring 1/2; Bottom Ring 1/4  
 (ah) Top Ring 1/2; Bottom Ring 1/4  
 (ai) Top Ring 1/2; Bottom Ring 1/4  
 (aj) Top Ring 1/2; Bottom Ring 1/4  
 (ak) Top Ring 1/2; Bottom Ring 1/4  
 (al) Top Ring 1/2; Bottom Ring 1/4  
 (am) Top Ring 1/2; Bottom Ring 1/4  
 (an) Top Ring 1/2; Bottom Ring 1/4  
 (ao) Top Ring 1/2; Bottom Ring 1/4  
 (ap) Top Ring 1/2; Bottom Ring 1/4  
 (aq) Top Ring 1/2; Bottom Ring 1/4  
 (ar) Top Ring 1/2; Bottom Ring 1/4  
 (as) Top Ring 1/2; Bottom Ring 1/4  
 (at) Top Ring 1/2; Bottom Ring 1/4  
 (au) Top Ring 1/2; Bottom Ring 1/4  
 (av) Top Ring 1/2; Bottom Ring 1/4  
 (aw) Top Ring 1/2; Bottom Ring 1/4  
 (ax) Top Ring 1/2; Bottom Ring 1/4  
 (ay) Top Ring 1/2; Bottom Ring 1/4  
 (az) Top Ring 1/2; Bottom Ring 1/4  
 (ba) Top Ring 1/2; Bottom Ring 1/4  
 (bb) Top Ring 1/2; Bottom Ring 1/4  
 (bc) Top Ring 1/2; Bottom Ring 1/4  
 (bd) Top Ring 1/2; Bottom Ring 1/4  
 (be) Top Ring 1/2; Bottom Ring 1/4  
 (bf) Top Ring 1/2; Bottom Ring 1/4  
 (bg) Top Ring 1/2; Bottom Ring 1/4  
 (bh) Top Ring 1/2; Bottom Ring 1/4  
 (bi) Top Ring 1/2; Bottom Ring 1/4  
 (bj) Top Ring 1/2; Bottom Ring 1/4  
 (bk) Top Ring 1/2; Bottom Ring 1/4  
 (bl) Top Ring 1/2; Bottom Ring 1/4  
 (bm) Top Ring 1/2; Bottom Ring 1/4  
 (bn) Top Ring 1/2; Bottom Ring 1/4  
 (bo) Top Ring 1/2; Bottom Ring 1/4  
 (bp) Top Ring 1/2; Bottom Ring 1/4  
 (bq) Top Ring 1/2; Bottom Ring 1/4  
 (br) Top Ring 1/2; Bottom Ring 1/4  
 (bs) Top Ring 1/2; Bottom Ring 1/4  
 (bt) Top Ring 1/2; Bottom Ring 1/4  
 (bu) Top Ring 1/2; Bottom Ring 1/4  
 (bv) Top Ring 1/2; Bottom Ring 1/4  
 (bw) Top Ring 1/2; Bottom Ring 1/4  
 (bx) Top Ring 1/2; Bottom Ring 1/4  
 (by) Top Ring 1/2; Bottom Ring 1/4  
 (bz) Top Ring 1/2; Bottom Ring 1/4  
 (ca) Top Ring 1/2; Bottom Ring 1/4  
 (cb) Top Ring 1/2; Bottom Ring 1/4  
 (cc) Top Ring 1/2; Bottom Ring 1/4  
 (cd) Top Ring 1/2; Bottom Ring 1/4  
 (ce) Top Ring 1/2; Bottom Ring 1/4  
 (cf) Top Ring 1/2; Bottom Ring 1/4  
 (cg) Top Ring 1/2; Bottom Ring 1/4  
 (ch) Top Ring 1/2; Bottom Ring 1/4  
 (ci) Top Ring 1/2; Bottom Ring 1/



For extra miles in heavy-duty truck service...

# Sealed Power

## PAX Pistons and Assemblies

**SEALED POWER PAX PISTON**—Lo-Ex\* virgin aluminum alloy with silicon base, which dissipates heat better. Special Eboniting process assures smoother-running engine, because piston surface is oil-impregnated, oil-absorbing. T-slot design, cam ground, with rugged internal design for extra strength and most efficient heat transfer.

**SEALED POWER SLEEVE**—uniformly machined from castings with unusually fine grain and dense molecular structure for extreme wear-resisting qualities.

**SEALED POWER GI-60 CONTRACTING GROOVE INSERT**—Puts spring-steel armor plate at point of greatest wear, the top ring groove. The only piston on the market in which this section can be replaced for a few cents.

**SEALED POWER RING SET**—Sealed Power Piston Rings, specifically engineered to do the best possible job in the make and model specified.

**SEALED POWER PISTON PIN**—Sealed Power Double Lapped Piston Pins of special analysis steel are triple heat-treated, and tested for hardness. Each pin is individually fitted to its own PAX Assembly.

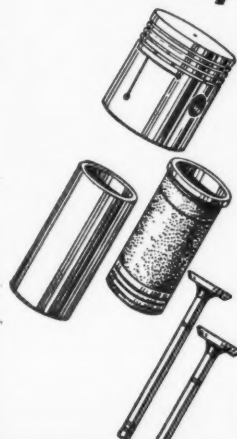
\*Registered trade mark of Aluminum Co. of America.



**All matched for peak performance**

Write for name of nearest distributor  
**SEALED POWER CORPORATION**  
**MUSKEGON, MICHIGAN**

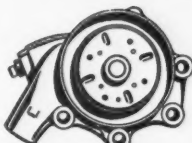
**Always use Sealed Power parts for best results**



**HEAVY DUTY PISTONS**—Aluminum or cast iron as indicated; exclusive T-slot design, cam ground, ruggedly designed, heat treated. Equal to or better than original equipment.

**WET OR DRY SLEEVES**—Machined from closely controlled castings, with exceptionally fine grain and dense molecular structure for long wear.

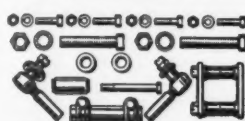
**VALVES**—Sealed Power Valves and valve parts are made from the correct grade of chrome nickel alloy steel for each engine, for finest performance and maximum service.



**WATER PUMPS**—Manufactured from finest quality materials to highest standards. Our line is complete.



**KING BOLTS & BUSHINGS**—Manufactured from highest quality forgings, and heat treated to meet your exact requirements.



**TIE RODS & SHACKLES**—Sealed Power Tie Rods, Spring Shackles, and Front Wheel Suspension Parts meet specifications of original equipment.

# Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment including the fifth tire and tube as of October 22, 1951. State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
<b>BUICK</b>					<b>CROSLLEY</b>					<b>HUDSON (Continued)</b>					<b>PACKARD (Continued)</b>				
Special 40					Bus. Cpe.	849	66	915	1350	Conv. Brghm.					250-2401				
Bus. Coupe, 2d.	1815				Hotshot	858	66	924	1184	Commodore 8					Cpe., Mayfr.	2973	194	3167	3820
Spt. Coupe, 2d.	1869				Sta. Wagon	903	69	972	1403	Club Coupe					Conv. Coupe	3119	202	3321	4040
Sedan, 2d.	1901			3600	Super Sports	929	70	999	1184	Sedan, 4d.					300-2402				
Sedan, DeL., 2d.	1944				Sup. Sed., DeL.	932	71	1003	1363	Conv. Brghm.					Tour. Sed., 4d.	2787	185	2972	3875
Sedan, 4d.	1955			3605	Sup. Conv.	934	71	1005	1320					400-2406					
Sed. DeL., 4d.	1998			3680	Sup. Sta. Wgn.	973	73	1046	1403					Tour. Sed., 4d.	3368	218	3586	4115	
Sed. Rivra., 2d.	2036			3645						<b>KAISER</b>									
Conv. Cpe., 2d.	2349			3830	<b>DE SOTO†</b>					Special									
Super 50					De Luxe					Bus. Coupe	1832	118	1950	3061	<b>PLYMOUTH</b>				
Sed. DeL., 2d.	3048			3685	Club Coupe	2055	115	2170	3475	Sedan, 2d.	1987	127	2114	3106	Concord, P22				
Sed. Rivra., 2d.	2147			3765	Sedan, 4d, 6p.	2066	115	2181	3570	Sedan, 4d.	2036	129	2165	3126	Coupe, 3p.	1421			2919
Sed. DeL., 4d.	2148			3755	Carry-All	2279	127	2406	3685	Traveler, 2d.	2085	132	2217	3210	Sedan, 2d.	1548			2969
Sed. Rivra., 4d.	2223			3845	Sedan, 8p.	2794	154	2938	4045	Traveler, 4d.	2134	134	2268	3270	Suburban	1910			3124
Conv. Cpe., 2d.	2493			3965	Custom					De Luxe					Savoy	2020			3184
Estate Wag., 4d	2871			4100	Club Coupe	2243	124	2367	3585	Sedan, 2d.	2095	132	2227	3151	Cam'dge, P23				
R'dmaster, 70					Club Coupe, 4d, 6p.	2261	126	2387	3685	Club Coupe	2114	134	2248	3111	Sedan, 4d.	1575			3059
Sed. Rivra., 4d.	2774			4240	Sportsman	2561	142	2703	3760	Sedan, 4d.	2143	135	2278	3171	Sedan, 4d.	1608			3104
Cpe. Rivra.	2780			4185	Convertible	2655	147	2802	3840	Traveler, 2d.	2192	138	2330	3285	Cran'bk, P23				
Cpe. Rivra., 2d.	2865			4235	Station Wagon	2827	156	2983	3960	Traveler, 4d.	2241	140	2381	3345	Club Coupe	1662			3074
Conv. Cpe., 2d.	2995			4355	Sedan, 4d, 6p.	2980	163	3143	4155					Sedan, 4d.	1690			3109	
Estate Wag., 4d	3459			4470	Suburban	3310	182	3492	4395	<b>LINCOLN</b>					Belvedere	1958			3182
										Coupe, 6p.	2505			4065	Cv. Ch. Cpe.	2057			3294
<b>CADILLAC</b>					<b>DODGE†</b>					Spt. Sedan	2553			4130					
Series 62					Wayfarer					Lido	2702			4100	<b>PONTIAC</b>				
Coupe	3167	202	3369	4050	Coupe, 3p.	1684	93	1757	3125	Cosmopolitan					Chieftain 6				
Sedan	3253	206	3459	4040	Roadmaster, 3p.	1784	100	1884	3175					4340	Bus. Coupe	1562	115	1677	3193
Cpe. de Ville	3547	221	3768	4120	Sedan, 2d.	1795	100	1895	3210	Spt. Sedan	3129			4415	Sed. Coupe	1687	122	1809	3223
Convertible	3681	228	3909	4340	Meadowbrk.					Capri	3350			4360	Sedan, 2d.	1687	122	1809	3243
Series 60					Sedan	1910	106	2016	3415	Convertible, 6p.	3891			4615	Sedan, 4d.	1738	125	1863	3273
Sedan	3815	246	4061	4200	Coronet										DeL. Sed. Cpe.	1783	127	1910	3278
Series 75					Club Coupe	1977	111	2088	3320	<b>MERCURY</b>					DeL. Sed., 2d.	1783	127	1910	3243
Sedan, 6p.	4791	308	5099	4690	Sedan, 4d.	1992	111	2103	3415	Coupe, 6p.	1947			3485	DeL. Sed., 4d.	1834	130	1964	3273
Imperial	4983	317	5300	4710	Diplomat	2298	128	2426	3515	Spt. Sedan	2000			3550	DeL. Cata. Cpe.	1998	138	2136	3343
					Conv. Coupe	2382	132	2514	3575	Monterey	2116			3530	Sup. Cata. DeL.	2056	141	2197	3353
					Sierra	2568	142	2710	3750	Convertible	2127			3530	DeL. Conv. Cpe.	2120	145	2265	3488
					Sedan, 4d, 6p.	2705	150	2855	3935	Station Wagon	2530			3760	Streamliner 6				
														3800	Sed. Coupe	1665	121	1786	3248
<b>CHEVROLET</b>					<b>FORD</b>					<b>NASH</b>					DeL. Sed. Cpe.	1761	126	1887	3263
Styl. Spec. JJ					De Luxe 6	1324		2990		Rambler Super					Station Wagon	2265	153	2418	3803
Bus. Cpe., 2d.	1335	94	1429	3040	Bus. Coupe	1417		3035		Suburban	1731	116	1847	2515	DeL. St. Wag.	2345	157	2502	3523
Sedan, 2d.	1410	98	1508	3095	Tudor	1465		3105		Sedan, 2d.	1810	119	1929	2420	Chieftain 8				
Spt. Coupe, 2d.	1415	98	1513	3060	Fordor					Convertible, 2d.	1833	121	1954	2430	Bus. Coupe	1631	119	1750	3273
Sedan, 4d.	1458	102	1560	3130	Cust. DeL. 6	1505		3025		Stat. Wag., 2d.	1833	121	1954	2515	Sed. Coupe	1756	126	1882	3303
Fltn. Spec. JJ					Tudor	1553		3105		Stat'm'n DeL.					Sedan, 2d.	1756	126	1882	3328
Sedan, 2d.	1410	98	1508	3090	Fordor	2029		3550		Bus. Coupe	1686	120	1806	2835	Sedan, 4d.	1807	128	1935	3363
Sedan, 4d.	1458	102	1560	3130	Station Wagon					Stat'm'n, Supr.					DeL. Sed. Cpe.	1852	131	1983	3310
Styl. DeL. JK					De Luxe 8	1411		3030		Sedan, 2d.	1785	125	1890	2930	DeL. Sed., 2d.	1852	131	1983	3333
Spt. Coupe	1507	105	1612	3115	Bus. Coupe	1492		3075		Sedan, 2d.	1789	125	1914	2935	DeL. Sed., 4d.	1904	133	2037	3373
Sedan, 4d.	1539	106	1645	3140	Tudor	1540		3145		Sedan, 4d.	1792	125	1917	2970	DeL. Cata. Cpe.	2067	142	2206	3428
Bel Air Coupe	1755	118	1873	3225	Fordor					Stat'mns Cust.					Sup. DeL. Cata.	2126	145	2271	3433
Conv. Coupe	1862	125	1987	3380	Cust. DeL. 8	1585		3075		Sedan, 2d.	1924	134	2058	2940	DeL. Conv. Cpe.	2190	148	2338	3568
Stat. Wagon	2013	132	2145	3470	Tudor	1590		3065		Sedan, 4d.	1947	134	2081	2950	Streamliner 8				
Fltn. DeL. JK					Club Coupe	1633		3145		Club Cpe., 2d.	1950	134	2084	2980	Sedan Coupe	1735	125	1880	3343
Sedan, 2d.	1491	104	1595	3125	Fordor	1925		3185		Ambassador					DeL. Sed. Cpe.	1831	130	1961	3348
Sedan, 4d.	1539	106	1645	3155	Victoria	1948		3305		Super					Station Wagon	2334	158	2490	3898
					Conv. Coupe	2110		3590		Sedan, 2d.	2111	148	2259	3370	DeL. Sta. Wag.	2414	160	2574	3628
<b>CHRYSLER†</b>					Station Wagon					Club Cpe., 2d.	2133	148	2281	3370	<b>STUDEBAKER</b>				
Windsor 6										Sedan, 4d.	2137	148	2285	3410	Champ. Cuat.				
Club Coupe	2196	123	2319	3570	<b>FRAZER</b>					Custom					Coupe, 3p.	1386	142	1328	2565
Sedan, 4d, 6p.	2217	123	2340	3627	Sedan, 4d.	2218	141	2359	3456	Sedan, 2d.	2269	157	2426	3380	Sed., 2d, 6p.	1452	147	1599	2679
Twn. and City	2843	156	2999	3965	Vagabond	2256	143	2399	3556	Club Coupe	2291	157	2448	3395	Coupe, 5p.	1477	149	1626	2650
Sedan, 4d, 6p.	2968	163	3131	4145	Manhtn. Sed.	2889	186	3075	3771	Sedan, 4d.	2296	157	2453	3445	Sed., 4d, 6p.	1482	150	1632	2690
Wind. DeL. 6					Mhntn. Cv. Sd.	2889	186	3075	3941	<b>OLDSMOBILE</b>					Champ. DeL.				
Club Coupe	2398	133	2531	3700						88					Coupe, 3p.	1462	146	1608	2610
Sedan, 4d, 6p.	2420	134	2554	3775	<b>HENRY J</b>					Sedan, 2d.	1907			3507	Sed., 2d, 6p.	1527	153	1680	2690
Trav. Sed., 4d.	2660	147	2807	3890	Sed. 2d, 4 cyl.	1251	82	1333	2293	Sedan, 4d.	1966			3542	Coupe, 5p.	1553	154	1707	2675
Newport	2741	151	2892	3855	Sed. 2d, 6 cyl.	1378	89	1467	2341	Sed. DeL., 4d.	2046				Sed., 4d, 6p.	1558	155	1713	2715
Conv. Coupe	2850	157	3007	3945	<b>HUDSON</b>					Super 88					Champ. Regal				
Sedan, 4d, 6p.	3171	174	3345	4295	Pacemaker 6					Club Cpe., DeL.	2025	148	2173	3557	Sed., 2d, 6p.	1603	159	1762	2890
Limousine	3302	181	3483	4415	Coupe, 3p.					Sed., DeL., 2d.	2068	150	2218	3579	Coupe, 5p.	1629	160	1789	2675
Saratoga 8					Brougham					Sed., DeL., 4d.	2127	152	2279	3636	Sed., 4d, 6p.	1634	161	1795	2728
Sedan, 4d, 6p.	2799	154	2953	4018	Club Coupe					Hol. Cpe., DeL.	2340	164	2504	3843	Convertible	1927	185	2112	2890
Club Coupe	2774	153	2927	3948	Sedan, 4d.					Cv. Cpe., DeL.	2447	170	2617	3831	Commander				
Twn. and City	3418	187	3605	4310	Conv. Brghm.					98					Regal				
Sedan, 4d, 6p.	3632	199	3831	4485	Super Six					Holiday Cpe.	2378			3762	Sed., 2d, 6p.	1779	176	1995	3045
Limousine	3937	214	4151		Club Coupe					Hol. Sed., DeL.	2388	167	2555	3787	Coupe, 5p.	1806	178	1984	3030
New Yorker 8					Sedan, 4d.					Hol. Cpe., DeL.	2639	182	2821	3857	Sed., 4d, 6p.	1811	178	1989	3065
Club Coupe	3108	171	3279	41															

# customers love it!

## Purelube Motor Oil builds service business for Dodge-Plymouth dealer J. Reynolds Jackson

Millsboro, Delaware, dealer Jackson is one of the many car dealers who switched to Purelube in March, 1950. He writes:

"... we have not only held our old customers, but have added many new ones : : : and have received nothing but favorable comments.

"... our mechanics report that in each case where Purelube Motor Oil is used, engine cleanliness has been outstanding."

If you want more satisfied customers and a bigger service business, call your Pure Oil salesman or local Pure Oil office today. Find out about Purelube, and the business-building Pure Oil Plan for Car Dealers.

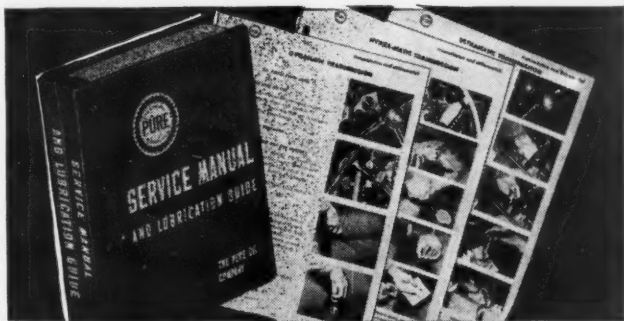
THE PURE OIL COMPANY • General Offices: Chicago



**NOTE:** Purelube is Premium Quality-PLUS! It meets all requirements where "heavy-duty" oil is recommended by passenger car makers.

# Purelube

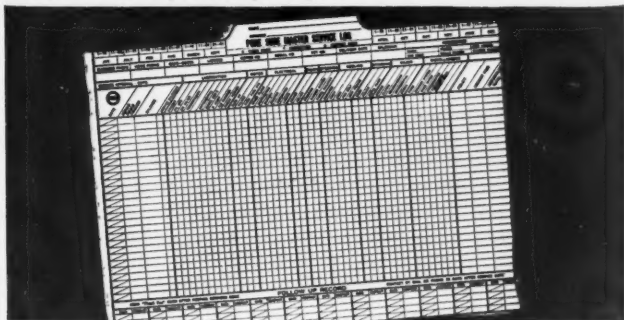
## THE SURE MOTOR OIL



Under the Pure Oil Plan, you get this Service Manual with illustrated step-by-step procedures to help your men do service jobs faster, better and more profitably for you.



You also get exclusive "serviceman's view" Lubrication Guide Charts that make it easy to give correct lubrication at every vital chassis and underhood point, for all cars.

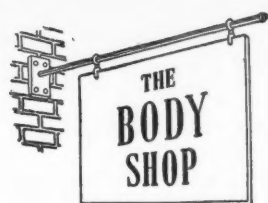
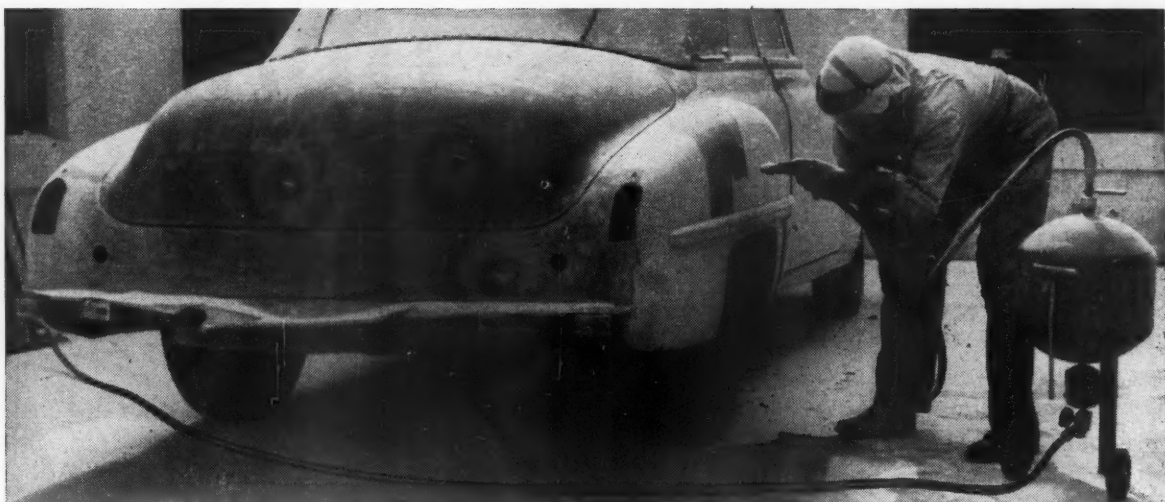


You also get practical business-building record forms and follow-up forms like this Master Service Log, designed by car dealers to help you sell more lubrication service jobs.



And you have available to you the complete, widely advertised Pure Oil line, including Purelube Automatic Transmission Fluid Type A.





## Sand-blasting Strips Clean...



Dallas C. Ellis and E. James Newcomer

reports Jim Newcomer, service manager

of Ellis Automotive Service, York, Pa.

This shop employs sand-blasting to remove the paint on many strip-down jobs

**F**OR the past year we've been using the sand-blasting method on some of our paint removal jobs where it is necessary to take the finish down to the bare metal. We have found it to be most satisfactory. The time required to take a job down, on an average car, is about six hours. The material, about six hundred pounds of sand, costs about \$4.00. The resulting job is excellent; here's how we do it.

After all metal work has been repaired, mask

off all the bright metal as would be done before a regular paint job. However, we use two layers of masking tape due to the abrasive action of the blast. We have found it necessary to mask off all the glass. If the edge of the window is masked within two inches of the blasting area, there is little danger of hitting the glass. Of course, with an inexperienced operator it would be safe to provide more mask edge. Next we cover the

(Continued on page 74)

# Take a tip from Gracey.....he knows....



STEVE GRACEY, of  
Gracey Auto Body Co.,  
Pittsburgh, Pa., writes...

Painting and Upholstering  
Tops and Seat Covers

Phone: SChenley 4901

Front Alignment  
Frames Straightened

**GRACEY AUTO BODY CO.**

SPECIALISTS ON COMPLETE WRECK REPAIRING  
4901 Liberty Avenue Pittsburgh 24, Pa.  
Colors Accurately Matched

June 16, 1950

Hein-Werner Corporation  
Waukesha, Wisconsin

Gentlemen:

I thought you'd be interested to know that we recently bought one of the Hein-Werner Push-and-Pull hydraulic body jacks—and find it to be one of the biggest time saving tools in our shop.

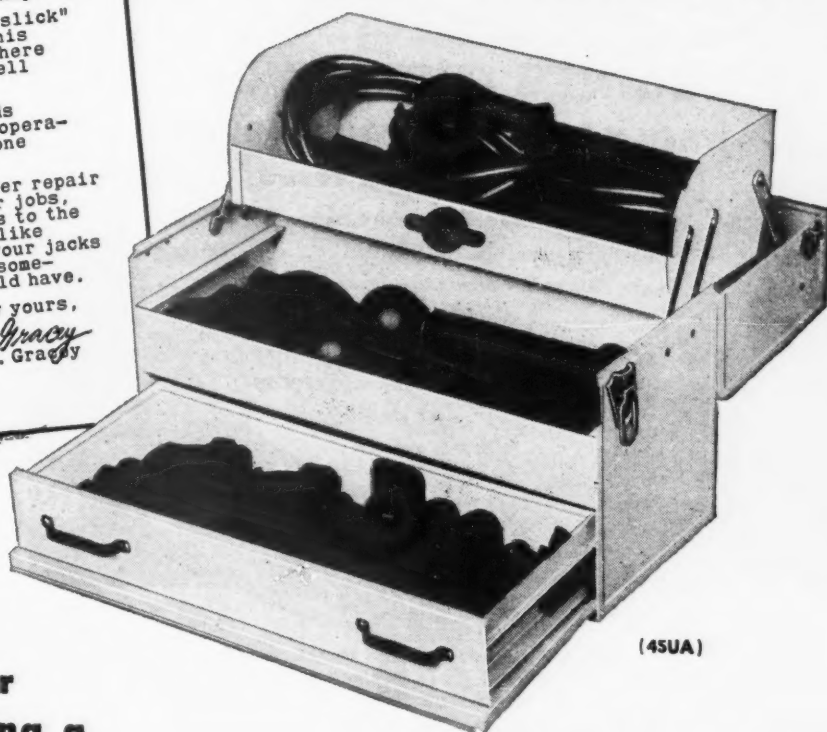
We can turn out what we call "slick" jobs much more quickly now, and this means, under our incentive plan there is more profit for employees as well as for management.

The direct cross pull on hoods and trunks with your jack is one operation, for example, that can be done easily with only one man.

Because we can now quote lower repair estimates and obtain more repair jobs, our volume has increased, thanks to the Push-and-Pull body jack. Looks like we'll be buying another one of your jacks before long. You've really got something every good body shop should have.

Very truly yours,  
*Stephen A. Gracey*  
Stephen A. Gracey

**"we can now quote  
lower repair estimates  
... and obtain more  
repair jobs ... thanks  
to the HEIN-WERNER  
PUSH and PULL JACK"**



(45UA)

## You, too, can increase your body and fender repair volume by using a **HEIN-WERNER PUSH and PULL HYDRAULIC JACK**

... \$127.75 buys a 4 SUA Set consisting of Hein-Werner Model H-800 Remote Control 4-ton PUSH and PULL Hydraulic Jack complete with assortment of 30 essential attachments and sturdy steel case, (illustrated). West Coast and Canadian prices slightly higher. Unsurpassed for body and fender work ... Easy to set up ...

Pushes or pulls direct with few attachments ... Pump cannot become airbound ... Operates at any angle, and in any position ... Push or pull with one ram — just turn release valve to right or left ... Available in 4, 10 and 20-ton capacity, with a wide variety of attachments.



Ask your jobber or write us for complete information  
**HEIN-WERNER CORPORATION • Waukesha, Wis.**

The Hein-Werner line of hydraulic jacks is COMPLETE! It includes Under-Axle Jacks of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity ... "Bumper-Lift" Hydraulic Jacks for passenger cars ... "Swift-Lift" and Service Jacks for shop use ... Cylinder Sleeve Pullers.

## Sand Blasting . . . . . Continued from Page 72

engine. The fine mist of dust works into any open crevices and might cause damage within the engine, even with the hood closed. We don't know for certain that covering the engine is absolutely necessary but we're taking no chances.

Then we continue the blasting process. This is quite simple and requires no special skill, just a

little practice. The operator wears a mask similar to the type used by a welder, except that this one has clear glass windows. Since we work in the open air we have found a respirator unnecessary.

An odd-shaped surface, such as drip moldings, around beadings, and so forth, the sand-blaster is a "natural." It makes inaccessible

crevices as easy to strip as the wide open spaces.

Wheels which normally require considerable cleaning before they can be stripped, are no trouble with the sand-blaster. Grease and mud come off easily.

After the car is shining like a new nickel, all masking tape is removed. This might seem like doubling the work, but we have found that it pays to pull off the tape before blowing off the surface with compressed air. If all the sand is not removed from back of the crevices, a blast from the spray gun, while painting, might loosen it, thus allowing it to lodge in the fresh paint. We spend enough time on cleaning off the job to be sure that there will be no sand left.

After the sand-blasting process the entire car is gone over with 80-D sandpaper, using a small air sander. This doesn't take long and smooths the job down to provide a better surface on which to apply the undercoat.

We have a concrete area measuring 25 x 20 ft. outside the shop on which we do our sand-blasting. We found that after the sand has been used once, it has been broken down too fine to be used a second time. After the job, we sweep it up and dispose of it and pile it in a spot alongside of the building where we have been trying to fill.

While we don't take every re-finish job down to the bare metal, when we do have one of these, especially on lacquer finishes, we use the sand-blaster. It does an excellent job in a short time.



**JOE STALIN  
WON'T LIKE  
THIS AD! \***

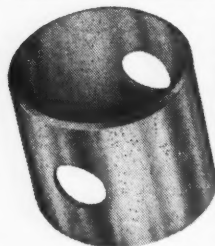
**ENGINES LIVE LONGER  
WHEN YOU REPLACE CAM BEARINGS  
with Dura-Bond all rounds**

Worn cam bearings can be a major cause of oil loss, resulting in starvation of main and con rod bearings. *This means premature engine breakdown!*

Cam bearings are too often overlooked. Yet surveys prove that premature breakdown is most often caused by failure to replace.

*When it's time for an overhaul,  
it's time to replace!*

\* Anything that keeps American cars and trucks running longer is sour grapes to Joe and his Kremlin kids. Replacing cam bearings with Dura-Bond all rounds is one sure way to guarantee maximum engine mileage. In Joe's book, that's for the birds.



### The ONLY TRUE ROUND

Tolerances are perfect before and AFTER installation. The *all round*, having neither *SPLIT* nor *INTERLOCK* = superior performance, durability, and ease of installation.

KEEP 'EM ROLLING

WRITE FOR CATALOG . . . listing our complete line of standard bore and common undersize cam bearings, main and con rod bearings.

**DURA-BOND BEARING CO.**  
Box C, 715 Loma Verde Avenue  
Palo Alto, California

**DURA-BOND**

**CAMSHAFT BEARING SPECIALISTS**  
CAMSHAFT, CON ROD, MAIN BEARINGS

HANDY COUPON FOR ORDERING DURA-BOND CATALOG

Please send us your complete catalog today.

Name . . . . . Firm Name . . . . .

Address . . . . . City . . . . . State . . . . .

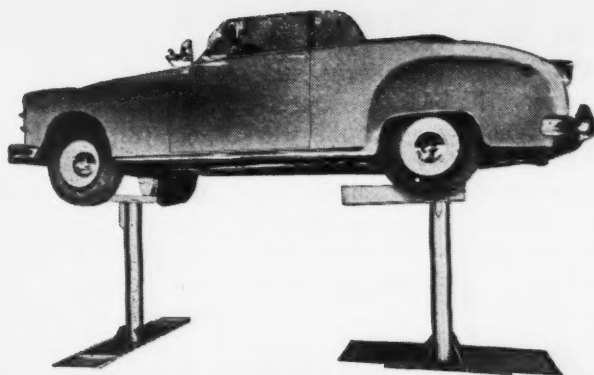
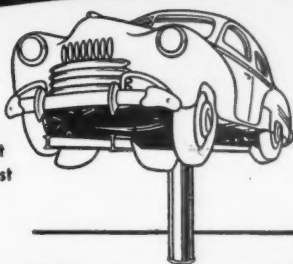
Dura-Bond Bearing Company, Box C, 715 Loma Verde Ave., Palo Alto, Calif.





**More Profits**  
**Through Greater Shop**  
**Efficiency — Install**  
**CURTIS**  
**AUTOMOTIVE**  
**SERVICE EQUIPMENT**  
**97 YEARS OF "KNOW HOW" BUILT IN**

ALSO, Single post rotating lifts for passenger cars and light trucks. Single or two-post for busses and trucks.



## CURTIS FULL HYDRAULIC TWO-POST SHOP LIFT

HAS THESE ADVANTAGES:

- No deep pit
- 60-inch wheelbase range
- Plunger travels 72 inches above floor (tallest men work in complete comfort)
- Front and rear steel frames shipped with doors and door operating mechanisms completely assembled. (Easy installation.)
- No obstructions above floor

## AIR COMPRESSORS

Electric or Gasoline  
 Motor Driven.  
 Vertical or Horizontal  
 Tank Mounted.



## HYDRAULIC CAR WASHER

(300 Pounds Pressure)

For better and faster car washing; more cars are washed per day—more profits for you.

See your CURTIS jobber or use coupon below for complete technical information.

A-31-2R

**CURTIS PNEUMATIC MACHINERY DIVISION**  
 of Curtis Manufacturing Company  
 1946 Kienlen Avenue, St. Louis 20, Missouri



I am interested in items checked: Name.....  
☐ AIR COMPRESSORS Firm.....  
☐ AUTO LIFTS Single Post ☐ Two Post ☐ Street.....  
☐ POWER CAR WASHERS City.....Zone....State.....

# CURTIS

**PNEUMATIC MACHINERY DIVISION**  
 of Curtis Manufacturing Company

1946 Kienlen Ave. • St. Louis 20, Mo.

## Pop O'Neill . . . . . Continued from Page 45

Pop the work he had done and insisted that each step of the way had been accurately performed.

Pop grunted, "Well, since I've already promised you tomorrow off for hunting, I suppose I'll have to do it myself. Where are you going anyway?"

"That," said Larry solemnly, "is a secret. A fellow told me of a

special spot, where the pheasants are thicker than blueberries on bushes and so tame you can bring them down with a fistfull of rocks."

"That's the place for you to go," put in Tommy slyly. "I'd hate to see you in operation with a gun."

"Look, smart guy," Larry rose to the bait, "I'm going out after

pheasants and if I don't come back here with two of the nicest birds you've ever seen, I'll buy you a brace of steaks."

"It's a deal," said Tommy quickly. "Although I'd hesitate to call it a bet," he side-remarked to Pop. "No gentleman would bet on a sure thing like that, but business is business."

By the time Tommy Winters got into work in the morning, Pop had already slipped into his coveralls and was working on the Dodge. When he removed No. 4 spark plug and found that it was fouled, he put in a new plug. When he revved up the engine, however, he found that it still missed. And on looking at the new plug in 4, he noticed that this was oil fouled also.

"That's a funny one," re-

**FOR ALL YOUR  
GRINDING JOBS**



**SIMONDS  
ABRASIVE CO.**

**Grinding Wheels**

**THE COMPLETE  
LINE FOR ALL  
GRINDERS**



Take a tip from leading car builders . . . use Simonds wheels, the only complete line serving all demands of automotive grinding. It contains everything you need for valve seat grinding, valve refacing, crankshaft regrinding and countless other essential repair jobs. Be sure to ask your jobber for Simonds Automotive wheels, made by Simonds Abrasive Company, a major grinding wheel maker for almost 60 years.

**SIMONDS ABRASIVE COMPANY**

Tacony & Fraley Streets, Philadelphia 37, Pa.



marked Tommy, peering over his shoulder. "Maybe the manifold's cracked."

"No," said Pop, "I don't think it is. We don't have a bad vacuum reading here at all and a cracked manifold would certainly spoil the vacuum reading. I guess we'll have to pull the head and see what's inside. Start unbuttoning it," he told the boy. "I'll have to make a few phone calls. I'll be back shortly."

As he sat down at his desk he glanced out the window and saw a heavy shower about to break. "Poor Larry," he shook his head. "What a day to pick to go hunting!"

And about the same time Larry  
(Continued on page 78)

(Advertisement)



**CERTIFIED**  
for  
**Long Mileage**  
**Engine Cleanliness**  
**Long Engine Life**

**NEW**

# SUNOCO DYNALUBE

Meets or exceeds all car manufacturers' recommendations for all 1951 engines

---

**HEAVY-DUTY, FULLY DETERGENT-DISPERSANT**

---

NEW Sunoco Dynalube is a remarkable new *heavy-duty* motor oil that actually improves the condition of most engines. Its *fully* detergent-dispersant action not only cleans engines, it keeps them clean by holding road dust and combustion deposits in suspension until drained at regular oil change.



was thinking the same thing himself. Up at daylight and off up the rough mountain road alone, he searched until at last he found the pasture recommended by his nameless friend. But it looked more like a blueberrying ground to him than a pheasant hangout. However, not being an expert at such matters, Larry decided he'd

go along with his friend's advice. Chucking a couple of loads into the gun, he started off across the field. Twice, rabbits started out from behind boulders and low-hanging bushes, but they disappeared before he had time to swing his gun. Once a loud whirl, bursting from directly under his feet, almost startled him out of

his breeches. So he missed his shot.

By eight o'clock he had had enough of tramping around in the underbrush, stumbling over rubble, slapped by branches, and scratched by brambles. Pheasant, if any there were, had no trouble at all in avoiding our hero.

The day was unseasonably warm for November and Larry began to sweat in his heavy hunting outfit. His hands were too warm with the mittens on, his gun barrel too cold with his mittens off. Tired, aching, hungry and bored, he sank down for a minute's rest on top of a knobby boulder. He shifted uncomfortably back and forth for a minute, then sadly regained his feet. A glance at his watch told him that, had he chosen to work, he would now be batting the breeze in a warm diner, sipping coffee, seated on a well-padded stool. "Even," he admitted to himself, "I would go without my coffee and be stretched out on a comfortable creeper underneath that Olds."

The more he thought of the pleasant warmth of the garage, the friendly banter with Tommy and Pop, the amount of work which would be waiting for him the following day, the more he thought he could dispense with the afternoon's pleasure of the hunt and go back where he belonged. He thought of the ribbing he would have to take from Tommy. It held him for a moment and with determination he started forward once more across the field.

A briar grabbed him by the  
(Continued on page 80)

## UNIVERSAL JOINTS & CHASSIS PARTS



**TRADE MARK**  
**NEAPCO**  
**MARK**

*This great trademark means—*

- A complete line.
- Finest materials.
- Exact manufacturing.
- Continuous inspections.
- Uniform packaging.
- Strategic warehousing.

NEAPCO PRODUCTS INC.,  
POTTSTOWN, PA.



Have

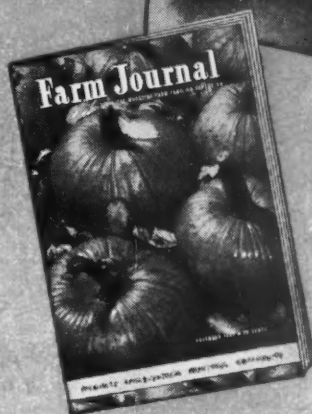
● Your biggest salesman in the biggest automotive market in America is Farm Journal.

● Dealers want local coverage. You get coverage of a dealer's best out-of-town customers like a local newspaper when you advertise in Farm Journal.

● Intensive editorial support promoting better automotive maintenance is exclusive with Farm Journal in America's biggest automotive market.

● You get more business when your products are advertised in Farm Journal.

you heard?



**FARM JOURNAL  
DOES MORE FOR YOU  
THAN ANY OTHER  
NATIONAL MAGAZINE**



Prove it to yourself. Tie in with the seasonal "Keep 'Em Rolling" editorial features promoting better automotive maintenance. The Fall get-ready-for-Winter article which appeared October 16 is still working for you. Are you working with it?

right ankle. His left foot rolled on a rolling stone and for several minutes he got plenty of exercise keeping his balance. After that he stepped with high knee action, like a broken field runner bucking for a break. Then the rains came. A crack of thunder, a flash of lightning and the skies turned loose on him.

A thunder storm in November! Larry raised his eyes to the skies with the sad look of a man betrayed. Then he promptly made for his car, chucked the gun on the back seat, and drove off to town. At first he planned to drive home for the day, but the thought of a rainy day at home, and his wife busy housecleaning, changed

his mind and, taking the lesser of two evils, he drove toward Pop's repair shop. He changed into his repair clothes and slipped into the back room.

He was prepared for a bad time, but it didn't develop. "Hi, Larry," was all Tommy said. "Driven in by the rain, hey? Have any luck?"

"No," said Larry, "they wasn't bitin'."

"Everyone has days like that sometime," said Tommy sympathetically. "Boy, this sure is a tough job here."

Larry brightened perceptibly. He felt on familiar ground again. "What's the matter?"

"Pop took a look at it earlier this morning," Tommy told him, "and found that No. 4 plug is fouling, so he had me pull the head."

"Where's Pop now?" Larry asked.

"He's in the office making a few phone calls, but he'll be right back."

"Let's take a look at it," said

## RIGHT DOWN THE LINE

### PRODUCT'S *Right...*

Burd Automotive Products are engineered and manufactured to perform better, longer. They back up your proper installation with the service results you have a right to expect.

### PRICE'S *Right...*

Of course the Burd line is properly priced to meet today's competition. Worth every cent you or your customers pay for them—Burd Automotive Products are, and will always be, good values to buy or sell.

### PROFIT'S *Right...*

The profit you make on Burd products is *right* when you sell them—still *right* long after the sale has been forgotten. For Burd products insure continuous customer satisfaction. Get them from your jobber.

INSTALL THEM  
WITH CONFIDENCE



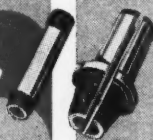
BURD PISTON RING CO., Rockford, Ill.  
DIVISION OF THE GABRIEL COMPANY



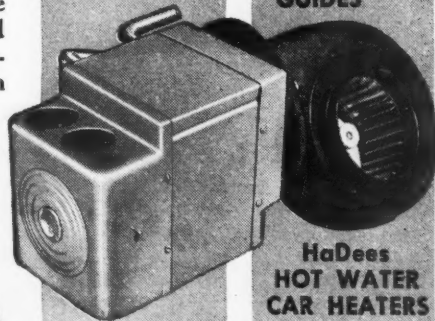
PISTON RINGS



VALVE PACKING



VALVE GUIDES



HaDees  
HOT WATER  
CAR HEATERS



### TUNE-UPS



SHANEY

"Hugo likes to demonstrate what a tune-up will do for the customer's car."

Larry. And he helped Tommy finish the job.

When they took the head off they saw a lot of carbon. "Phew, that sure should be cleaned," remarked Larry. "But, even so, I've never heard of carbon making a car miss."

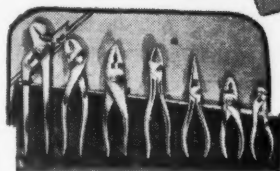
"Hello, Larry," said Pop, joining the couple. "I sorta hoped you'd come in when the weather got bad out there. No sense in catching cold just to get a pheasant or two. And we sure have plenty to do  
(Continued on page 82)



# Give your men **Snap-on\*** Tools



**the man's gift  
that  
builds good will!**



#### STANDARD PLIER SET — PL-70-K

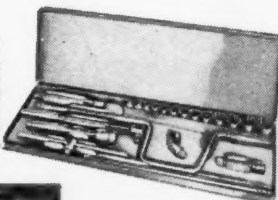
Seven fine Snap-on Vacuum-Grip Pliers that will handle every gripping, twisting, cutting, plier job in the shop. This set in durable kit bag makes a grand gift any mechanic will prize.



**TORQOMETERS**—Model TQ-150 shown—capacity zero to 150 foot-pounds—handles most jobs in the shop. Here's a tool every mechanic should own. When you eliminate mechanical distortion you safeguard your work. Other models up to 2,000 foot-pounds.

#### FERRET SET — 221-F-B

Saves time in the tight places! This popular 21-piece set of slim, sturdy wrenches includes 13 sockets, sliding bar, ratchet, nut spinner, speeder, universal joint and 3 extensions. This set handles the majority of nut turning jobs. Comes in special metal box.



#### SNAP-ON GIFT CERTIFICATES

—let the recipients choose their own pet Snap-on Tools. Your Snap-on man will make them out in whatever denominations you wish.

Your thoughtfulness in giving Snap-on Tools will be remembered long after many a more costly, short-lived gift would have been forgotten. They'll remind the men in your shop who receive them, time after time, that you valued their loyalty and respected their skill so much that you gave them the best. Could any present do more?

Snap-on Tools *build good will*. And it's *so easy* to make just the right choice, too. The Snap-on man who serves your shop knows mighty well (or can find out fast) exactly what tools each mechanic has had his eye on! Or—to show *complete* regard for a mechanic's personal preference—there's the Snap-on Gift Certificate, in any amount you wish.

Time's getting short, though. Why not take care of the matter **NOW**? Just buttonhole your Snap-on man.



## SNAP-ON TOOLS CORPORATION

8036-K 28th Avenue, Kenosha, Wisconsin

\*Snap-on is the trademark of Snap-on Tools Corporation

around here. We can make the time up to you on a nicer day."

"Oh, think nothing of it," said Larry grandly. "I sorta thought you might need me around here this afternoon. What do you make of this one?"

"I don't know yet," Pop admitted readily. "Golly, that sure is a lot of carbon there. Say," he said

suddenly, "pull that intake valve on No. 4."

As he lifted the valve, Larry said, "Look at this!"

The three of them took turns bending over. The valve was completely clogged with hard carbon. "Hm," said Pop, "that would certainly do it. I guess we won't have any trouble selling Gus a valve

job this time. Excuse me, boys, while I make a phone call." He glanced at his wrist watch. "Gus ought to be just about coming in for his lunch now."

Apparently Pop's memory of his own boyhood on the farm was pretty accurate, for in a few minutes he came back chuckling. "Got him," he said, "and, believe it or not, he didn't even give an argument. Says to overhaul the job. Give 'er the works."

"No," said Larry, "not Gus Greene."

"Yup," said Pop.

"How did you swing that deal?" inquired Larry.

"Well," Pop grinned, "I twisted his arm a little bit. I pointed out that his car has given him ninety thousand good miles now and is apparently in excellent condition. He bought the price on the overhaul when I told him what another '41 Dodge would be worth on the market. He decided for his purposes the overhaul on the '41 would be the best solution. Seems to think prices have gone up a bit since the good old days." Pop shook his head. "Poor old Gus, sometimes he seems to be living in the past."

Larry grunted. "Can't say as I blame him," he snapped with a side glance at Tommy as he thought of the two steaks which he would shortly be purchasing. "If he's smart, he'll go on living in the past. It's a lot cheaper."

## "NO OTHER TOOL SO HANDY FOR ALL AUTOMOTIVE SOLDERING"

says **HARRY F. KAHLER**, Proprietor, Harry F. Kahler & Son, Auto Service, Philadelphia 11, Pa.

"My time and my mechanics' time costs money. Old fashioned, slow-heating soldering tools waste time and current. But my new 250 watt Weller Soldering Gun saves both—paid for itself in a few months. *Five-second heating* and chisel-shaped *RIGID-TIP* give faster soldering. Trigger-switch control means no wasted current—never have to unplug the gun between jobs. *Dual heat* lets me use my Weller Gun for light and heavy work—body touch-up, electrical and radiator repairs, ignition, instruments, generator, gas tank and gas line work. Every auto mechanic should have a Weller Gun in his tool box."



## New WELLER 250-Watt Auto Mechanics Soldering Gun

**DUAL HEAT**—single heat 200 watts; dual heat 200/250 watts; 120 volts, 60 cycles.

**WELLERTIP**—Rigid, provides more soldering area.

**SOLDERLITE**—Prefocused spotlight.

**5-SECOND HEATING**—No waiting—no wasted current.

**LONGER REACH**—Slides into tightest corners.

**TRIGGER-SWITCH CONTROL**—Instantly on, instantly off.

Order from your distributor today, or write for bulletin direct.

**WELLER**  
ELECTRIC CORP.

801 Packer Street, Easton, Pa.



**SOLDERING GUIDE**—Get your copy of "SOLDERING TIPS"—new fully illustrated 20-page booklet of practical soldering suggestions. Price 10c at your distributor or order direct.



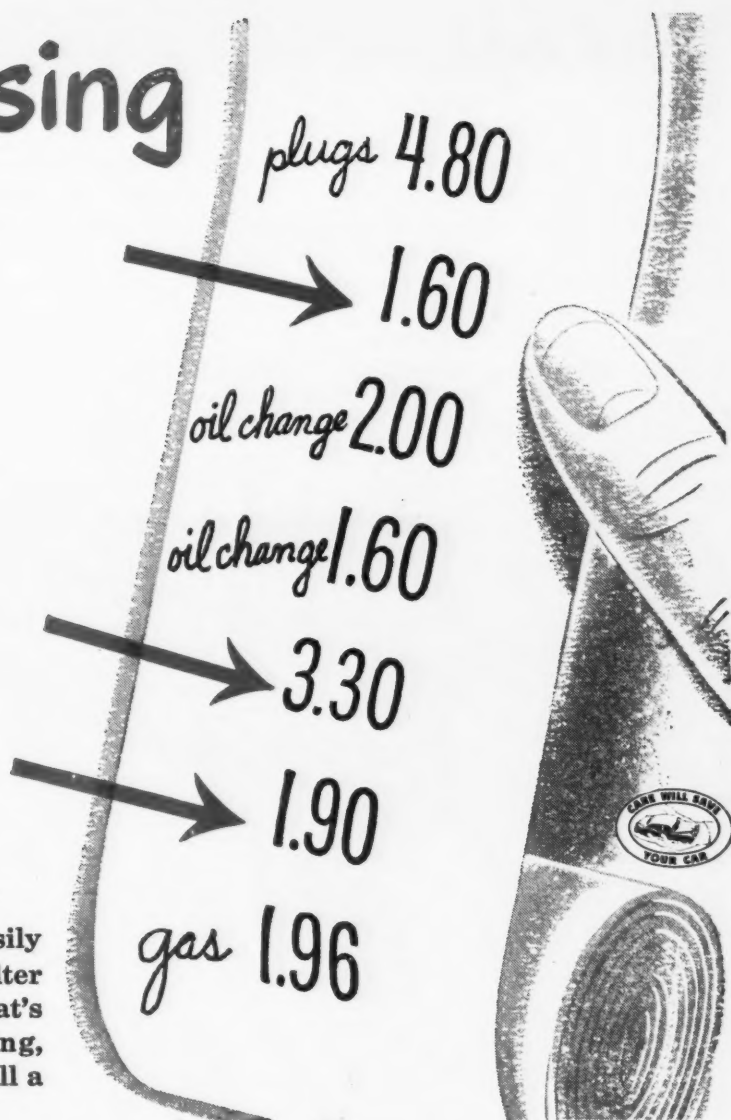
# Are you missing profitable oil filter business like this?

**LOOK . . .** You can make extra money easily on oil filter refills. Always check the filter when you check (or change) the oil. That's what money-making dealers are doing, averaging up to \$1.50 every time they sell a Purolator\* Micronic Refill.

**Here's why:** 1. A recent, nation-wide survey shows that 9 out of 10 motorists buy refills when shown they need a new one. 2. Nearly 8 out of 10 cars and trucks on the road are filter-equipped, need new refills at regular intervals. 3. Dealers and motorists, thousands of them, in all our 48 states, prefer Purolator Micronic\* refills.

**Looks good, doesn't it?**

Well, it is good! Just use Purolator tie-in materials to attract sales. And follow the Purolator Minimum



Stock Plan . . . it shows what a small inventory you need to sell all cars.

**Remember!** The Purolator Micronic Oil Filter is the filter with the refill that has 10 times greater filtering area, traps up to 3 times as much dirt as ordinary filters, including abrasives as small as microns (.000039") . . . the refill that leaves the additives in—won't warp, distort, or disintegrate in water or crank-case condensate. *The only refill with Dirt-Check Windows that tell and sell at a glance!*

\*Reg. U. S. Pat. Off.



**PUROLATOR PRODUCTS, INC.**

Rahway, New Jersey • Toronto, Ontario, Canada

Chilton's MOTOR AGE, NOVEMBER, 1951





## Paint Jobs . . . . . Continued from Page 52

paint jobs in 1948; 13,167 in 1949 and 14,080 in 1950.

So thoroughly mechanized and systematized has the paint operation become that Johnnie & Mack can turn out a car in five hours, including preparation, painting, drying and cleaning. Their single-operation system for each workman from the preparing of colors to the

operation of the moving bake ovens has gradually reduced the working time per car. By the time a car is ready for the customer, 45 different workmen performing different operations have worked on it. 209 employees work in the entire establishment.

Similar methods are employed in other departments. For example, in

the safety checking lane, which specializes in front end and brake work, an inspection can be made in seven or eight minutes, each man being a specialist in each operation.

As in most busy shops, every man is likely to be engaged in some task when a customer drops in. So that no one will be kept waiting a minute longer than necessary, the firm has a hostess near the front door to greet every visitor. On the counter of the cashier's department is a loud speaker, over which the hostess calls for an estimator as soon as the customer enters. The advantage of this is that the customer knows he is getting immediate attention.

A section of the main office department, furnished with comfortable chairs and settees, is a com-

**OUTMODED COILS**  
*Just won't do for*  
**MODERN CARS**

The higher voltages required by today's high compression engines demand modern Coils. Compare and you'll choose ECHLIN as today's outstanding Ignition Coil!



**ECHLIN** Ignition  
A PRODUCT OF  
ECHLIN  
CONTACTS  
COILS • CONDENSERS  
& OTHER AUTOMOTIVE  
ELECTRICAL PARTS

ECHLIN MANUFACTURING COMPANY, Dept. MA, 220 EAST ST., NEW HAVEN 5, CONN.



*"Don't bite off more than you can chew—that's what you said when we decided to go in debt for a car."*

bination waiting room and sales room for upholstery fabrics and seat covers. On a wall of this section is a lighted panel which is a great help to those who book repair jobs as it gives an up-to-the-minute check on the status of work in every department. Three colors of lamps are used, green indicating "go ahead and take in work, no delay;" amber indicating "better inquire before making definite promises," and red indicating "no promise of quick delivery." These lights are shown under the following classifications of work: Body work, fender work, paint, touch-up, seat covers, tops, belt linings, glass and safety. The necessity for such a constant check-up on all depart-

(Continued on page 86)



Score new highs in muffler sales with Maremont's proven merchandising aids tying-in with this dynamic advertisement, one of a series now appearing in

191 SATURDAY EVENING  
**POST**

- Large, colorful easel-back Poster
- Newspaper mats
- Hand-out folders describing Carbon Monoxide Danger

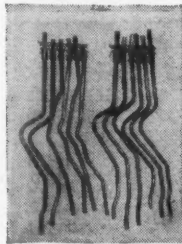
- Colorful Window Spots
- Dealer Mailing Cards
- Quick Quoter Catalogs
- Inspection Reports

Score new highs in muffler sales with Maremont's exclusive space-saving Muffler and Tail Pipe Racks, that keep your stocks constantly "on display."

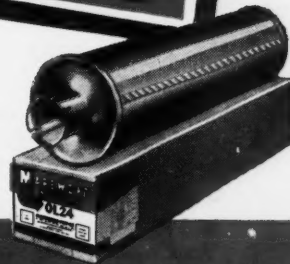


This muffler rack holds 16 most popular mufflers, which cover 75% of your customer requirements. The attractive sign invites muffler inspection.

No valuable floor space is required for tail pipes when you use this wall rack. It stocks 12 pipes, keeps them up, out of the way.



Alert Dealers are looking to Maremont today as never before. Aggressive promotions, added to Maremont's superior quality and construction make a "touchdown" combination that registers where it counts... in extra muffler sales and profits. Maremont's complete Goal-to-Go program of Merchandising and Selling Helps is available to all franchise dealers.



GET THE FACTS...  
For full details, see your nearest Maremont wholesaler, or write the factory.

# MAREMONT MUFFLERS

ALSO MANUFACTURERS OF  
MAREMONT SPRINGS AND HELPER SPRINGS

MAREMONT AUTOMOTIVE PRODUCTS, INC., South Ashland at 16th, Chicago 8, Ill.

## Paint Jobs . . . . . Continued from Page 84

ments is shown by the fact that the plant averages seven convertible tops a day, 30 sets of seat covers a day, 10 head linings and five belt linings a day.

One of the things that strikes the visitor's eye almost immediately upon entering the main office is a series of five large photographic reproductions hanging in frames

on the upper wall showing a badly wrecked car inside and out, and the completed job inside and out when Johnnie & Mack had put it back into serviceable condition. These pictures portray graphically how the shop, with its 12 departments, can restore a car after it has appeared to be an almost hopeless wreck.

Although Johnnie & Mack's establishment is in downtown Miami, it is about 15 to 20 blocks from the main shopping area, so a free bus service is operated for the convenience of customers. Two buses are run, leaving the plant on the hour and half-hour and making stops at three leading department stores, the return trips being made from these stores on the quarter-hour.

Johnnie & Mack are one of the largest users of newspaper advertising space in Miami. Their advertisements run from two columns to double pages. They have their own advertising director, Nat Abrahams, who prepares all copy. Prices are stressed on every item. Credit arrangements are offered on a "nothing down" basis. A well-manned credit department, in enclosed quarters, takes care of all applications for credit; credit is not left to the salesman's discretion.

**rebabbitted,  
reconditioned . . .**

### YOUR COMPLETE CONNECTING ROD SERVICE

Your Federal-Mogul jobber provides you with the nation's finest connecting rod service.

From stock, he supplies reconditioned or rebabbitted rods for outright sale, or on exchange basis. He has the bolts, nuts, shims and bushings you need.

And he's your source for top-quality Federal-Mogul precision insert bearings, for main, connecting rod or camshaft replacement.

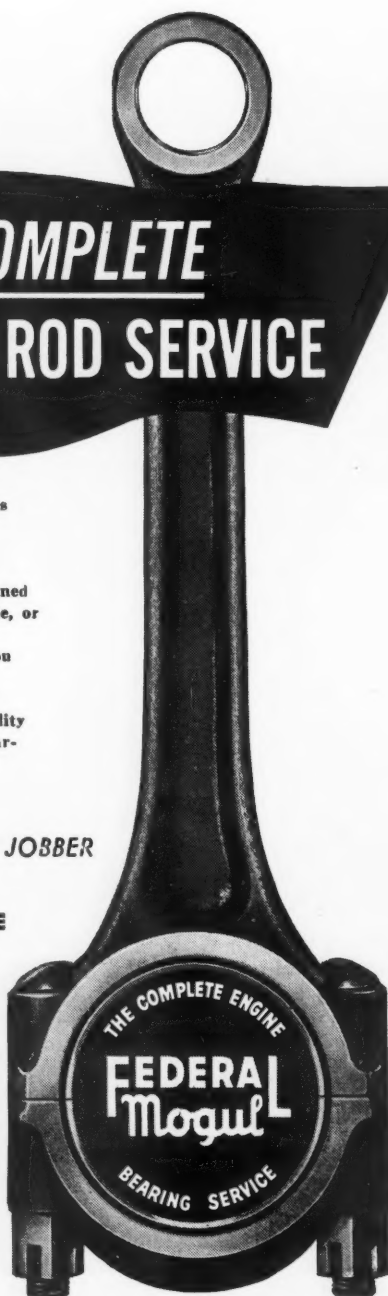
**ASK YOUR FEDERAL-MOGUL JOBBER**

#### FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

**DETROIT 13, MICHIGAN**

The Complete Line—more than 7,000 Items: Engine Bearings (Main, Connecting Rod and Camshaft)—Bushings—Reconditioned Connecting Rods—Rebabbitted Connecting Rods—Connecting Rod Bolts and Nuts—V-Seam Piston Pin Bushings—Bearing Metals—Laminated Shims.



**"Preventive maintenance, madam. If this knot were to slip in our shop we'd have a panic on our hands."**

#### Tinted Glass May Be Offered on Full GM Line

With all states but one having approved tinted glass for windshields and car windows, the way is clear for its adoption by more car companies next year. Buick has been the principal user of the glass, as an extra-price option, and it is understood that Cadillac and Oldsmobile have offered it to some extent. Now it is possible that it may also be extended to Pontiac and Chevrolet and may be adopted by other companies.



# VIXEN

Trade Mark Reg. U.S. Pat. Off.

# MILLED CURVED-TOOTH FILES



MADE ONLY  
BY  
**HELLER**

**SMOOTHER  
FINISHING!**

**FASTER  
CUTTING!**

**EASIER  
WORKING!**

**LONGER  
LASTING!**

Old hands know it—apprentices learn it fast. It takes a genuine “VIXEN” to produce that “like-new” quality finish quickly, easily.

Of superior cutting power, “VIXEN’s” sharp milled curved-teeth practically “plane” the metal. In restoring contours, you actually *shave* off the welds and smooth the surface. No tracking, grooving or clogging.

Work is scratch-free...shining bright.

And remember—because only a milled curved-tooth “VIXEN” can be resharpened again and again, it costs you less in the end. Your jobber has the cuts and shapes you need, including the popular “VIXEN” babbitt cut file—all packed in the white carton and individually sealed in white envelopes for your protection.



## HELLER BROTHERS COMPANY

America's Oldest File Manufacturer  
Newcomerstown, Ohio



Handy holder easily curves “VIXEN” in or out to fit contour of auto body or fender

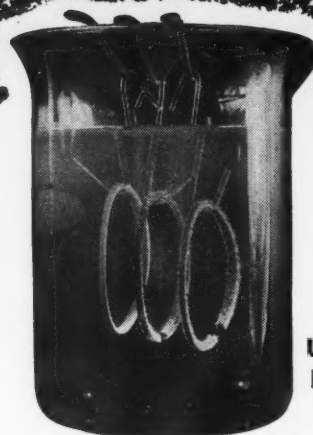
VIXEN FILES ARE MADE ONLY BY HELLER



# ALTINIZING

## THE FINEST OF ALL PISTON RING COATINGS!

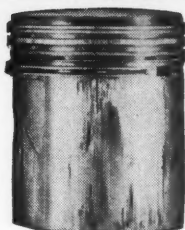
ACID TESTS PROVE IT!



UNRETOUCHED PHOTOGRAPH

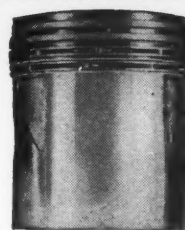
**FRICITION** causes motor wear . . . but so does **ACID ACTION!** Acids duplicating those formed in a motor are shown in the glass container. Note the acid attacking the two ordinary rings at the right causes bubbles to rise. In motor operation that means wear. Now note no bubbles rise from the ring at the left because it is **ALTINIZED!** That means less wear.

### LEAK-PROOF RINGS ARE SCUFF PROOF RINGS



PISTON FITTED  
WITH ORDINARY RINGS

This picture shows scuffing and wear during break-in period. Rings have never been seated and worn surface prevents proper seating action. Thus effective Ring operation is impaired.



PISTON FITTED  
WITH ALTINIZED RINGS

1. Rings and piston show slightest possible scuffing and wear during break-in period.
2. Rings seating properly.
3. Positive sealing action of rings due to fine bearing surface—Altinized finish.
4. Successful ring operation due to lack of scuffing and premature wear; proper seating of rings, and positive sealing action.

# McQUAY-NORRIS MANUFACTURING CO.

*Yours for the Asking*



## AD-A-SHIRT

**IT WORKS FOR YOU WHILE  
YOU WORK**

It tells your customer what you sell, arouses his curiosity and gives you the opening you need.

A genuine Mark Twain, gray, light-weight, cotton broad-cloth shirt. It is fully preshrunk, registered and guaranteed. Available in four sizes: small, medium, large and extra large. It is the same as shirts sold by retailers at from \$3.00 to \$3.50 each.

*Yours for the Asking*

Place your order for four sets of LEAK-PROOF Piston Rings of your selection. Ask your jobber for one of these fine shirts. Sign the special order form and the shirt will be mailed direct to you. You pay your regular price for the LEAK-PROOF sets with nothing extra for the shirts. How much simpler could a plan be?



**McQUAY-NORRIS MFG. CO. St. Louis 10, Mo.**

Please send full details on "AD-A-SHIRT" to:

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# LEAK-PROOF PISTON RINGS



# "SUCCESS IS A 24-HOUR JOB,"

... says Dave

Reading time: 1 minute, 30 seconds

"There was no five o'clock whistle in the oil fields," says Dave. "I guess that's where I learned, as a 'roughneck' helper of a drilling crew, that extra time and extra effort pay off."

Dave applied this principle early. In a lull between jobs he put in long hours to finish a business course in record time. He put in long hours in the wheat harvest from Oklahoma to Manitoba. He liked automobiles and wanted a stake to get to Detroit.



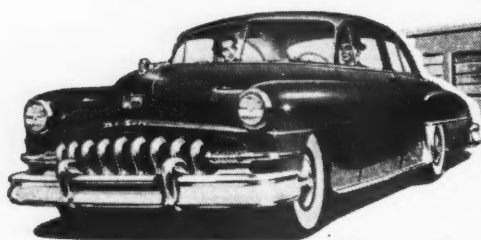
And so one day he was grinding crankshafts for Chrysler engines. Chrysler started an evening sales school. Dave jumped at the opportunity. He even took on a spare-time job in a used car lot holidays and other odd free hours to put his training to work. In a year he'd finished the course and was earning so much in his spare-time selling he joined a DeSoto dealer as full-time salesman.

Dave's sales volume and superb customer relations won him spots first as used car sales manager, then as sales manager of both new and used car sales. When the dealer retired, De Soto officials were so impressed with Dave's record they gave him a "go ahead" on a new dealership. A banker advanced the necessary funds and Dave was in business. A business that thrived.

Then Dave moved to a new location and constructed a modern plant only to be greeted by the automotive sales lull of World War II. "That's when my policy of service really hit the jackpot," he recalls. "Many a night I'm called out of bed to make good on that policy but I've found it's worth it. My shop and myself were kept on a 24-hour work basis."

Dave says that today he knows more than 2,000 customer-friends by name. His payroll is now seven times the original five employees. "The way I have grown," he sums it up, "proves there is nothing like this automotive business for a man who really wants to serve his neighbors and his community."

Write for our free booklet containing a number of these stories of accomplishments by enterprising men. Chrysler Corporation, 341 Massachusetts Ave., Highland Park 3, Mich.



## Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS  
Fine Cars of Great Value

## Floor Plan

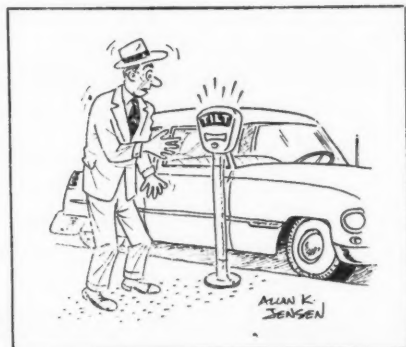
Continued from Page 56

The parts department is centrally located on the floor, with a sidewalk surrounding it so that pedestrian traffic around the parts counter or at the display windows will not obstruct the flow of vehicles through the shop.

The lubrication department has two lifts, either of which is entered from the street, again saving space. Another space-saving device is the overhead reel apparatus, which puts all the equipment necessary for the average chassis lubrication job overhead, out of the way.

The right side of the shop floor is used for general repairs, except for a front section in which the tire storage and repair service is situated. Daytona Motors does a large volume of tire business.

According to J. Saxton Lloyd, president of the firm, the yearly service volume exceeds one hundred thousand dollars. Over fourteen thousand repair orders are processed each year. Of the sixty employees at Daytona Motors, forty-one are in the parts and service departments, under the direction of A. L. Lilly.



## DeSoto Dealers and Factory Approve Council Plans

DeSoto has joined the long list of automobile manufacturers with factory dealer councils. An organization plan has been approved by a committee of DeSoto dealers and company management after nearly a year's study. The company's more than 3200 dealers have been notified of details of the program, which calls for a series of meetings to be attended by DeSoto-Plymouth dealers.



You'll find it good business to install **PERFECTION** Certified Replacement Parts. The low installation cost wins the favor of your customers, and the dependable performance of these products makes your customers real boosters for you.

Behind the parts constituting this great line are over 30 years of **PERFECTION** manufacturing achievement. This important "know-how", the use of the finest materials, heat treating under scientific control, precision accuracy and rigid inspections throughout production—all contribute to furthering the fine reputation accorded **PERFECTION** products.

There is a **PERFECTION** jobber near you. He carries a representative stock of these quality parts and is prepared to render prompt, efficient, friendly service. If you do not know his name, write us.



## *Perfection Gear Company* *Harvey, Illinois*

**PERFECTION PRODUCTS INCLUDE:** Silent Timing Gears, Metal Timing Gears, Silent Timing Chains, Sprocket Gears, Transmission Gears and Parts, Differential Ring Gears and Pinions, Differential Cases and Parts, Fly Wheel Gears, Clutch Plates, Pressure Plates, Clutch Cover Assembly Parts, Clutch Forks and Parts, Clutch Throwout Bearings, Clutch Rebuilders.

## Easamatic . . . . . Continued from Page 39

treadle vac when a poorly functioning brake system is found.

1. Hard pedal may be due to

(a) Vacuum failure, faulty vacuum check valve, collapsed vacuum hose or a plugged vacuum fitting.

(b) Bound up pedal pivot.

(c) Glazed lining.

(d) Grease or brake fluid on

linings.

(e) Treadle vacuum unit trouble caused by internal vacuum hose loose or restricted; or jammed plunger valve; or vacuum leaks in the unit caused by loose piston plate screws, faulty rubber bumper pad in reaction diaphragm, loose piston packing, or a faulty hydraulic plunger vacu-

um seal.

2. Grabbing brakes may be caused by

(a) Grease or brake fluid on

lining.

(b) Scored drum.

(c) Anchor pin frozen.

(d) Treadle vac unit valve trouble caused by reaction diaphragm unit leakage; broken counter reaction spring; restricted diaphragm passage or a sticking and sliding valve action.

3. If the pedal goes to the floor or almost

(a) The brakes may need adjustment.

(b) Air may be in the hydraulic system.

(c) Hydraulically fluid reservoir may need replenishing.

(d) A cracked drum or the treadle-vac hydraulic compensating valve may be leaking or the hydraulic plunger seal or the compensating port or output port fitting seal leaking.

4. If brakes fail to release or slow release

(a) Brake anchors could be frozen.

(b) Brake pivot pedal may be bound.

(c) Brakes may be improperly adjusted.

(d) Treadle vac unit trouble caused by a faulty residual check valve; excessive hydraulic plunger seal friction; compensating port plugged; excessive piston packing friction; restricted air passage; piston stroke interference; sticky valve plunger; or a broken piston return spring.

### INCREASE YOUR SERVICE WITH UNBEATABLE **KING** TESTING EQUIPMENT "TOPS IN TESTING ACCURACY"



By late 1951 there will be 7,600,000 more cars and trucks in the 3-10 year age bracket. This is an increase of 60%. Major service volume will increase. Get your share . . . get ready to turn out more work. King equipment operates faster for increased profits on every service job.

Send for your King catalog today! It covers the competitively priced King line of testing equipment that's "tops in testing accuracy."

### AVOID GUESSWORK . . . BUILD CUSTOMER CONFIDENCE WITH **KING** TESTING EQUIPMENT

#### MODEL MT-830 ENGINE TESTER

Operates from 110 volts—no storage batteries. Simple . . . only two testing leads. Extra large D'Arsonval type meters. Features the exclusive King spark plug tester. Competitively priced at \$490.

#### MODEL D-7 DISTRIBUTOR TESTER WITH BASE CABINET

For thorough electrical and mechanical analyses on all vehicle distributors. Bench model where space is limited—only \$345. Complete with base cabinet \$434.50.



**KING** ELECTRIC EQUIPMENT CO. | 9123 INMAN AVE.,  
CLEVELAND 5, OHIO



"This is my wife, Mr. Osbert. She used to be the mimeograph operator at the office."



# Electronic Baking MILLION DOLLAR IMPROVEMENT IN CORK GASKETS

More dependable performance  
assured by this New  
Curing Process



**ONLY ARMSTRONG-VICTOR GASKETS  
GIVE YOU THESE ADVANTAGES!**

This development was no small undertaking. Only the vast resources of Armstrong-Victor made it possible.

You'll have no more of old-fashioned steam-cured cork when you see what Electronic Baking does for you in Armstrong-Victor Gaskets. They handle easier . . . they're stronger . . . more pliable. They seal tighter and stay tighter because they're more resilient. Yet, they cost no more than ordinary gaskets.

You can put more confidence in every job you seal with these new, improved Armstrong-Victor gaskets. They'll help build your reputation for dependable work. Your Victor Jobber can supply them now—in packaged sets or individual pieces—whatever you need, for every make and model.

Victor Manufacturing & Gasket Company,  
P.O. Box 1333, Chicago 90, Illinois

**VIC CORKY SAYS:** Only genuine  
Armstrong-Victor Replacement  
Gaskets have this exclusive trade-  
mark—the two notches. Insist on it.



## GREATER STRENGTH

Electronic Baking gives cork composition greater tensile strength than steam-cured cork. Makes Armstrong-Victor gaskets more pliable . . . easier to handle . . . less likely to break or crack.



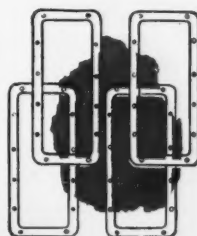
## MORE SEALING POWER

Electronic Baking preserves more natural liveliness of raw cork. This greater resiliency gives Armstrong-Victor gaskets greater sealing power. Compression tests show almost 100% uniformity of recovery.



## MORE UNIFORM QUALITY

Electronic Baking eliminates over-curing or under-curing of cork composition. Assures maximum uniformity of density, strength, resilience and color—never possible with steam curing.



# Armstrong-Victor



CORK COMPOSITION GASKETS • CORK SHEETS

## Cooling System . . . . Continued from Page 41

cause pre-ignition, detonation and scoring of the pistons and cylinder walls. Such intense heat prevents proper clinging of the oil to the cylinder wall and consequently poor lubrication. Also, large pieces of scale break off to restrict the flow throughout the cooling system. This further increases the overheating condition.

Also, rust accumulations are a danger sign for the water distribution tube. Once this tube has been eaten through, the water is not properly directed to the valve seats. The result—burning, sticking and warping of the valves.

Rust will even eat through a freeze plug in the block, causing leakage and eventual overheating.

Another cause of clogged cooling systems is accumulated particles of rubber which enter the system because of deteriorated hose.

While a copper radiator will not rust, it will corrode. White deposits on the core are an indication of a porous radiator, the result of corrosion. Once the core has become porous, it cannot be repaired. The only remedy is replacement.

So the "Finger Test" tells an important story. If the customer can be shown an accumulation of rust, scale and corrosion deposits at the dip of a finger, he should be told how serious it may be further inside the radiator and block. The remedy, a thorough clean-out and installation of a good rust inhibitor.

If the cooling system is to be cleaned, the job may be done chemically by reverse flushing or by machine. On severely clogged systems, the radiator may have to be removed and the core rodged out and the engine block pressure flushed.

Rust prevention is very important and should follow the cleaning. Use a dependable brand of rust and corrosion inhibitor in accordance with the manufacturer's instructions. With anti-freezes which contain these compounds, of course, further use of rust inhibitor is unnecessary.

However, when clean water is being used in the cooling system, every car is a prospective customer for inhibitor. If the radiator is dirty, it means that after the sys-

(Continued on page 96)

# NEW!! NEW!! NEW!! FISH-EYE KILLER ELIMINATES FISH-EYES IN REFINISHING SILICONE POLISHED CARS!



FISH-EYE KILLER is a special substance that is easily added to your primers, standard hot or cold lacquers, or enamels before spraying. FISH-EYE KILLER is guaranteed to eliminate fish-eyes caused by painting over silicone polished cars.



It saves hours of labor because it eliminates solvent washings to remove silicones.



FISH-EYE KILLER is completely harmless to finishes . . . will not change paint colors. Treated paint stays permanently fish-eye proof whether used at once or stored for long periods.



FISH-EYE KILLER can be used on any car or any finish whether it has been siliconed or not.



One bottle of FISH-EYE KILLER treats 28 pints of paint or primer . . . enough to completely paint four cars.

easy to use

Put only one eye-dropperful (dropper furnished with each bottle of FISH-EYE KILLER) in each pint of your standard paints or primers thinned to spraying viscosity. Shake slightly—then spray. Takes less than a minute.

Enough FISH-EYE KILLER to treat 28 pints of paint only

**MONEY BACK GUARANTEE!** If you are not completely satisfied your money promptly refunded! FISH-EYE KILLER is approved by leading auto repair and refinishing shops.

**\$2.00**

We pay postage



**JOBBERS! DON'T MISS THIS OPPORTUNITY. WRITE FOR COMPLETE INFORMATION**



**TONE MFG. COMPANY**  
712 Monroe Ave., N. W.  
Grand Rapids, Michigan

Please send me ..... bottles of FISH-EYE KILLER.

Name .....

Address .....

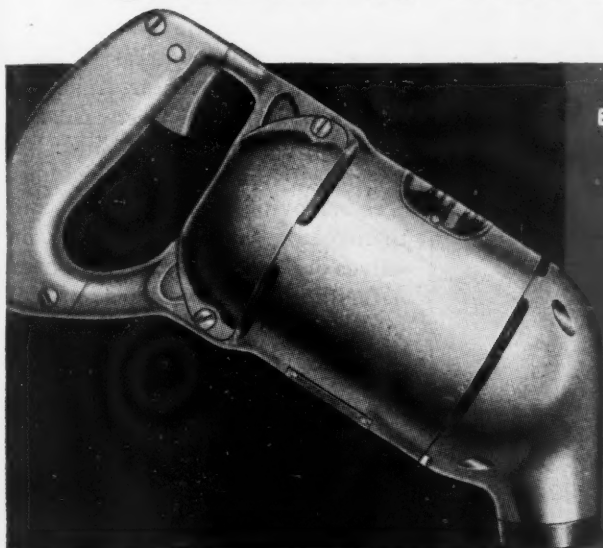
City ..... State .....

Sorry, no C.O.D. orders accepted. Please send cash, check or money order for full purchase price with your order.



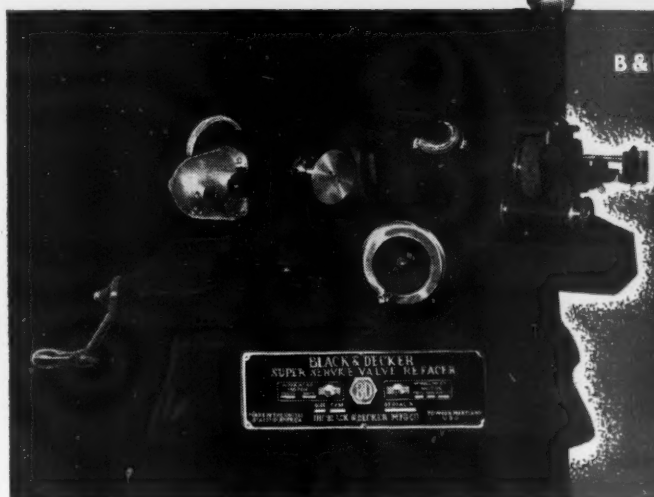
# For finer, faster VALVE JOBS...

## *Switch to* **BLACK & DECKER POWER!**



### B&D VIBRO-CENTRIC® VALVE SEAT GRINDER

is fast, accurate, foolproof. Concentric grinding insures correct alignment, mirror finish. Vibrating action reduces stone wear, prevents stone loading. Powerful, yet light in weight. Available in complete kits offering assortments of equipment for all the most popular cars or for special groups of cars, trucks and tractors.



### B&D DELUXE SUPER-SERVICE VALVE REFACTOR

is equipped for complete job, no extras to buy! Requires no complicated adjustment. Permits traverse grinding of any angle valve face from 0° to 90°. Handles all popular stem sizes, head diameters. Quick-clamp collet for faster operation. Wet grinding at both wheels.



**W**HEN IT COMES to turning out perfectly matched, gas-tight valve assemblies, nothing else can hold a candle to Black & Decker Valve Reconditioning equipment! Designed for years of dependable service, these correctly engineered, precision-built Tools get the job done faster, get it right the *first* time, to help you make more profits!

See your nearby B&D Distributor for a demonstration of these Valve Refacers, Valve Seat Grinders and Kits. Ask him

about the many other B&D Tools that cut your costs on any job. Let him show you why—for speed, precision and profits—it pays to “Switch to Black & Decker POWER!” Write today for free catalog to: THE BLACK & DECKER MFG. CO., 627 Pennsylvania Ave., Towson 4, Maryland.

\*Trade Mark Reg. U. S. Pat. Off.





## Cooling System . . . Continued from Page 94

tem is flushed, rust inhibitor will be sold. If the radiator is clean, the customer should be approached on the idea of keeping it clean by adding a rust inhibitor.

Before replacing the radiator cap, after the "Finger Test," examine the cap carefully. If the car is equipped with a pressure system, test the pressure valves to

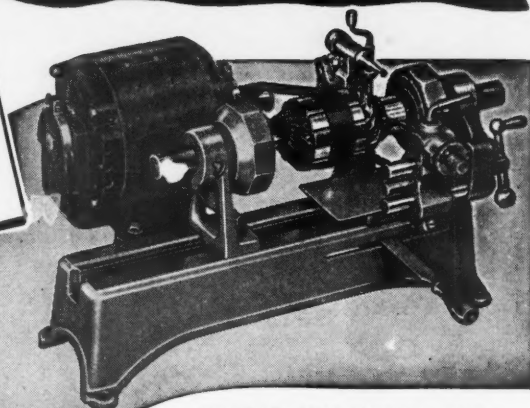
see that it operates freely, and examine the gaskets. The purpose of this type of cap is to hold the pressure within the cooling system to about seven pounds per square inch, so that the boiling point of the coolant will be increased (with water, to about 227 degrees). The cap has a lower seal surrounding the pressure

valve and vacuum valve. When pressure exceeds the specified amount, the pressure valve opens, allowing coolant to escape to the over-flow pipe. Since the system is completely sealed, a vacuum valve is necessary. When the pressure within the system drops below atmospheric pressure, this valve allows air to enter, thus preventing collapsed hoses. Always allow an engine to cool down below top driving temperatures before removing a pressure cap and then remove it cautiously. If the valves or gaskets in the cap appear defective, the cooling system will no longer be pressurized, so a defective pressure cap should be replaced.

There's more to cooling system service than the cleaning of the system. A poor joint at the cyl-

## THIS TRUCUT PACKAGE REALLY PUTS YOU IN BUSINESS!

GET EXTRA PROFITS  
from  
Starter-Generator  
Work!



TRUCUT ARMATURE LATHE  
AND UNDERCUTTER

There's plenty of extra profit in starter-generator work . . . if your shop is equipped to handle it!

And you can handle it with these three TRUCUT tools . . . all tried and tested . . . all designed especially for automotive repair jobs! With them, you can machine and undercut commutators perfectly; test for shorts, open circuits, and grounds; make quick, easy work of dismantling and assembling generators. The TRUCUT Press is also useful on dozens of other jobs around your shop.

This TRUCUT package actually pays for itself in an amazingly short time. Enables you to handle work you are now sending out . . . or helps you to do it more quickly and profitably! Write for free details and catalog M11, today.

**FRANK N. WOOD CO.**

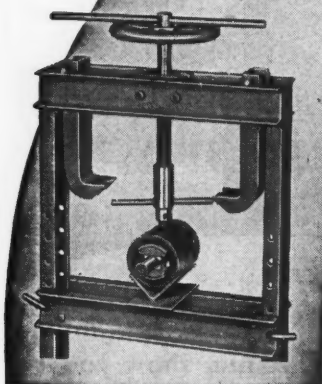
SINCE 1923

**TRUCUT**

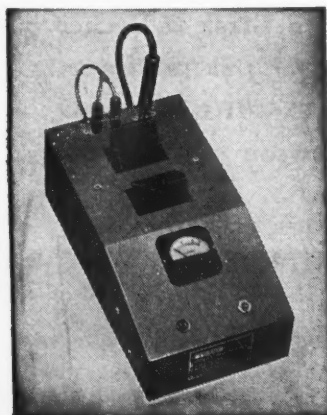
344 W. Main Street • Waukesha, Wisconsin

Pacific Coast Address

1330 W. Olympic Blvd., Los Angeles 15, Calif.



TRUCUT SHOP PRESS



TRUCUT ARMATURE TESTER



"While you're letting the car down, Dear, where should I put this?"

inder head gasket can cause trouble, not only from a standpoint of lost pressure but due to decreased cooling efficiency as well. Oil enters the water, causing formations of sludge; leakage may develop at the gasket; and in a pressure system, pressure from the cylinder will work into the cooling system to allow the pressure relief valve to be open at all times. Tightening cylinder head bolts with a torque wrench should be part of seasonal cooling system service.

Fan belts and hoses, too, should be considered as an important part of the cooling system when checking it over for winter. Radiator hoses are a big item. A clogged or broken radiator hose is doubly serious when anti-freeze is in the cooling system. And with every radiator hose replacement there is a possible sale of a pair of hose clamps.

(Continued on page 99)

# "FITZGERALD

Metallic Aluminum-Fused-Oxide Steel Asbestos

## GASKETS\* ARE BUILT TO LAST,"

Says P. J. Fitzgerald



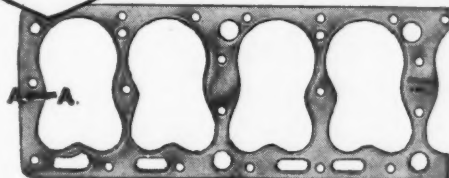
### SECTION A—A

.002"-.003" THICK  
FUSED ALUMINUM OXIDE

ELECTRICALLY  
ANNEALED STEEL

ASBESTOS

.002"-.003" THICK  
FUSED ALUMINUM OXIDE



# FITZGERALD

*Gaskets*

SINCE 1906

There's a Fitzgerald Gasket For Every Engine  
Grease Retainers — Cork Gaskets — FITZ-Rite Treated  
Fiber Gaskets for oil, gasoline and water connections  
COMPLETE SETS FOR MOTOR REBUILDERS

For original equipment or replacement, I say to you that Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets\* will stand the most rugged tests.

They were developed to provide the strength, compressibility, resiliency and resistance to rust and corrosion that modern high compression engines demand. They must be good for we have tripled our production since they were introduced.

A gasket is one of the most vital parts of an engine, more essential than even gasoline. It must stay put after installation. Nearly half a century has given us the know how to make them so they will. It pays to use and sell them. Replacements distributed only through jobbers.

\*Service Mark Registration Pending

*P. J. Fitzgerald*  
President

**THE FITZGERALD MANUFACTURING CO.**  
Torrington, Connecticut

CANADIAN FITZGERALD, LTD.  
TORONTO, CANADA

BRANCH AND WAREHOUSE  
LOS ANGELES, CALIFORNIA

# Alert Dealers

are stocking the  
expanding line

## CARTER FUEL PUMPS



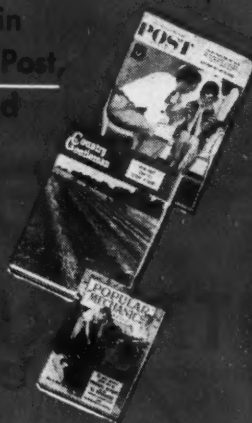
POWER  
CENTER



because they're designed and  
built to last longer and they're  
backed by a strong national  
advertising campaign in  
The Saturday Evening Post,  
Country Gentleman and  
Popular Mechanics, to  
pre-sell them to  
millions of car-owners.



See your nearest Carter  
distributor or dealer and  
stock up with this  
profit-building line  
of better fuel pumps.



**CARTER CARBURETOR CORPORATION**

Saint Louis 7, Missouri

Division of American Car and Foundry Company





## Cooling System

Continued from Page 96

The brain of the cooling system is the thermostat. If the thermostat isn't working, the cooling system won't function properly. With a thermostat that does not close, the engine will run cold with consequential poor operation, sludge formation, oil dilution, excessive gas consumption and (with hot water heater installations) driver discomfort. When the thermostat does not open properly, the engine will overheat and serious damage may result. It is important to run the engine long enough to be sure that the thermostat is holding the cooling system at the proper temperature. If the condition of the thermostat is questionable, it can be removed and tested in a pan of water which is heated on a small electric hot plate. With a thermometer in the pan of water, notice when the temperature reaches the specified opening point for that thermostat. At that time the bellows or thermocouple should begin to cause the thermostat to open. Allow the water to cool and note whether the thermostat closes again as the temperature drops below the closing point.

Another point to check on the cooling system is the mounting brackets of the radiator. If the radiator is not solidly mounted to the chassis, continuous vibration may cause separation at seams and consequent leakage.

A mechanic who makes the "finger test" on every car that comes into his shop has the opportunity to be sure that he's getting his share of cooling system maintenance work.



## Spot the Trouble—Fix It... the Quick BOWES Way!

Everything's right there—no time or space wasted. In this compact, handy *Complete Tire Repair Department* you have the Air Powered Check-N-Spect to locate the trouble . . . and . . . the Bowes Dough Boy Gun for nail holes and minor casing repairs . . . the Bowes Lectroseal for larger casing breaks. The bottom shelf takes the Chemical Tube Repair Cabinet and your tools. The spacious drawer holds a large supply of Tirerepair Sections. You turn out better and faster tire repairs this way . . . and profit by it!

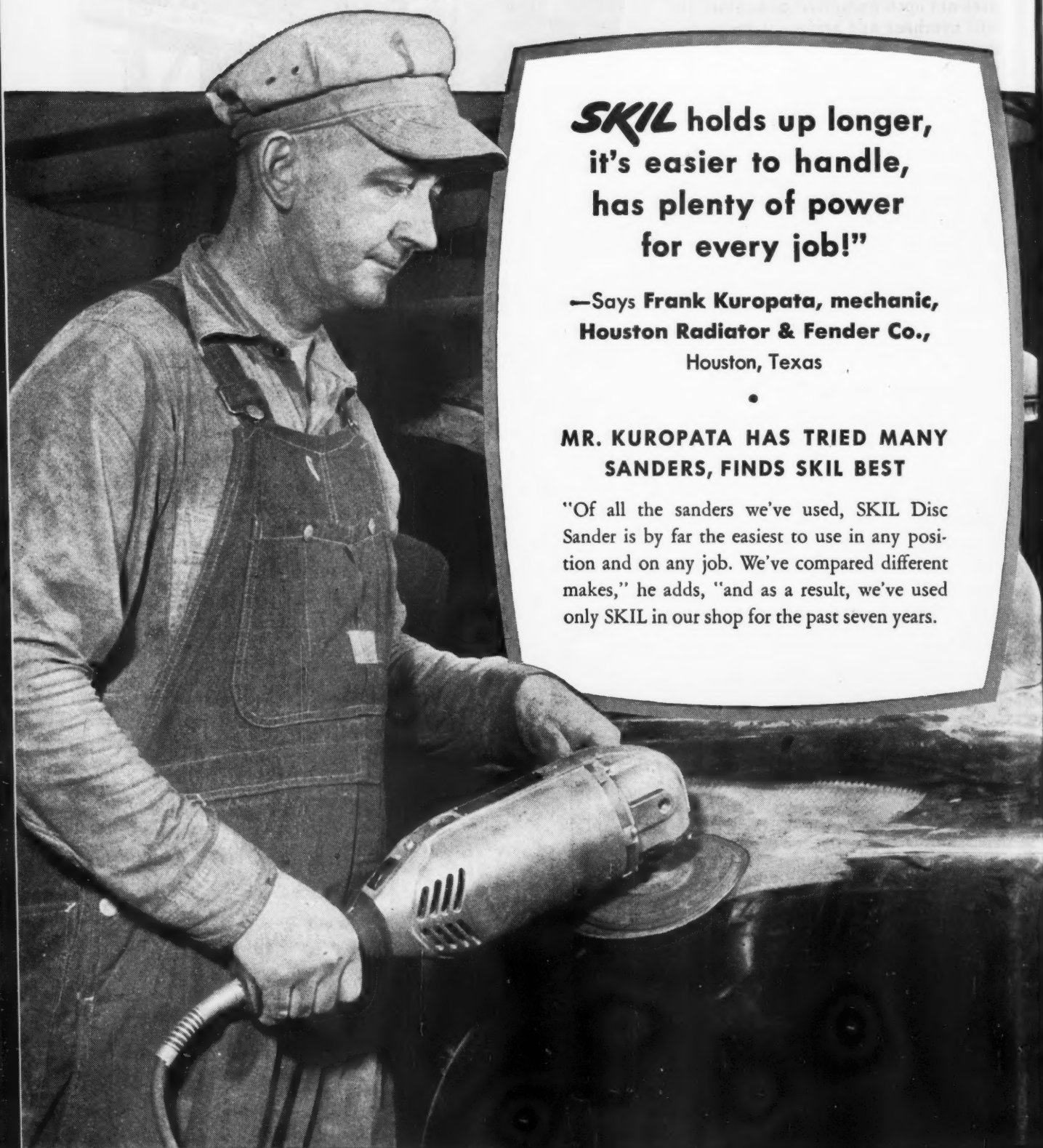


This *Complete Department* will equip you to meet and cash in on the present demand for tire-saving service . . . and prove there's real money in Bowes Tire Service. Ask your Bowes "Seal Fast" Distributor, or write direct to the factory.

Show your customers you are ready for speedy service. Let them see your *Complete Tire Repair Department*. It pulls business . . . and profits!

**BOWES "SEAL FAST" CORPORATION**  
INDIANAPOLIS 7, INDIANA

# "We've tried them all NONE PERFORMS LIKE **SKIL** DISC SANDERS..."

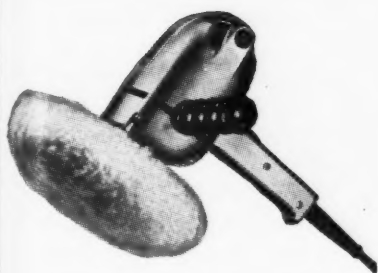


**SKIL** holds up longer,  
it's easier to handle,  
has plenty of power  
for every job!"

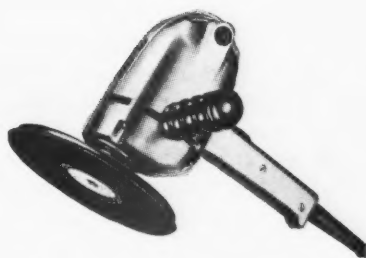
—Says Frank Kuropata, mechanic,  
Houston Radiator & Fender Co.,  
Houston, Texas

## MR. KUROPATA HAS TRIED MANY SANDERS, FINDS SKIL BEST

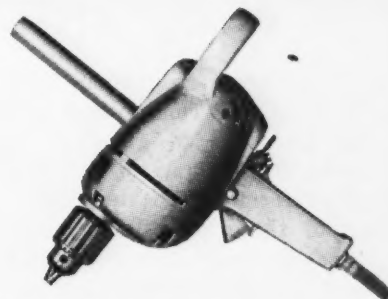
"Of all the sanders we've used, SKIL Disc Sander is by far the easiest to use in any position and on any job. We've compared different makes," he adds, "and as a result, we've used only SKIL in our shop for the past seven years."



**Polisher.** Four times faster than hand polishing. Easily operated. Easily handled. Light weight. Full-size 7" pad. Model 570.

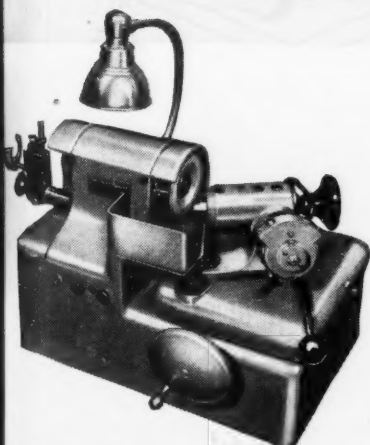


**Disc Sander.** New low-priced tool amply powered for regular use. Perfect balance. Full-size 7" disc. Model 551. Other models for specific duties.

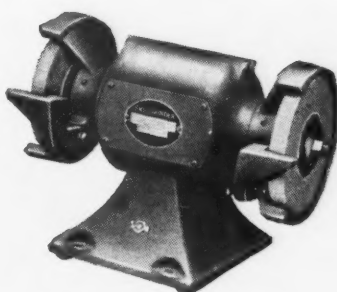


**Drills.** Model 80—Standard duty.  $\frac{1}{2}$ " capacity. Compact design for use in restricted space. One of the 26 models designed for efficient and economical drilling. Complete range of capacities. Speeds from 200 to 5,000 r.p.m.

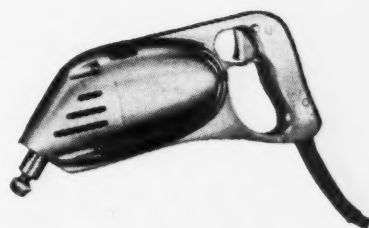
## Ask Your **SKIL** Jobber Today About the World's Finest Automotive Tools!



**Valve Refacer.** Grinds valves, valve stems, and rocker arms. For wet or dry operation. Two motors. Standard equipment contains all the "extras"; micrometer butt grinding attachment, depth gauge, built-in coolant system.



**Bench Grinders.** Four sturdy models meet exact requirements. All models have ball bearing construction, removable wheel guards, and heavy base for stability. Sizes range from 6-inch,  $\frac{1}{4}$  h.p. to 10-inch, 1 h.p.



**Seat Grinders.** Model 318—Standard duty. Light weight. Cool running.  $45^\circ$  angle drive permits easy work in confined spaces. One hand balance. Trigger switch with locking pin for continuous grinding. Heavy duty seat grinders also available.

**SKIL**  
PORTABLE TOOLS

SKIL Products are made only by SKILSAW, Inc.  
5033 Elston Avenue, Chicago 30, Illinois

SKILSAW factory branches in principal cities.  
In Canada: Skiltools, Ltd., 3601 Dundas Street West,  
Toronto 9, Ontario



## Valve Job Notebook . Continued from Page 47

If the head is ground down to increase the compression, it will be necessary to grind the push rods an equal amount. A check to determine if the push rod is of the proper length may be made by depressing the hydraulic lifter so that all the oil is pushed out of it; then insert a feeler gage. The maximum clearance should be

not more than .070 in., not less than .030 in. If it is more than .070 in. a new push rod should be installed; less than .030 in., the push rod end should be ground. To find bent push rods roll them across a flat surface.

When removing the rocker arms and push rods, mark them so that they can be returned to their origi-

nal position. Check valve stem to guide clearance. It should not exceed .005 in. Excessive clearance will cause noisy valves, excessive oil consumption, and improper seating of the valves.

Before grinding the valve seats, you should know how the car is going to be operated. If a car is driven a lot in the city traffic and at slow traffic speeds, the seat width should be from 3/64 to 1/16 in.

Valve seats should be cut so that there is no more than 1/32 in. from the outer edge of the seat to the edge of the flange on the valve head to allow heat to escape and to provide maximum life for the valve job.

# EDELMAANN

for 42 years

## headquarters for the world's finest TESTING EQUIPMENT

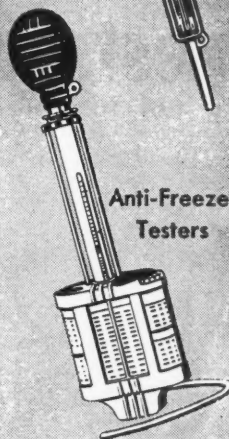
Since 1909, Edelmann has led the field in the manufacture of battery hydrometers, anti-freeze testers and battery service equipment. Simplicity, precision and accuracy are the keynote of Edelmann's never-ending program to improve the serviceability of its products. As a result, Edelmann testing equipment has always set the standard for accuracy and dependability.

**Insist on Edelmann for all of your testing equipment needs. Contact your Jobber.**

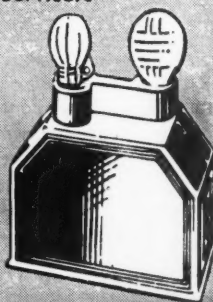
Battery Testers



Anti-Freeze Testers

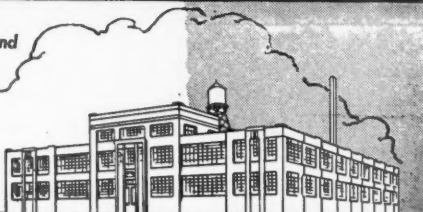


Battery Servicers



**E. EDELMANN & CO.** 2332 Logan Blvd., Chicago 47, Ill.

World's Leading Manufacturer of Battery and Anti-Freeze Testing Instruments



Valve jobs will last much longer if the exhaust valve guide counter-bored section is removed. This can be removed by using a 10/32 in. drill, ground almost flat then carefully drilling out to the top of the chamfer. Care must be exercised so that the chamfer is not removed as any sharp edges or a reduced valve stem bearing surface in the guide, will cause more damage than the carbon deposits. If the cut extends below the chamfer, replace the guide. The 10/32 in. drill is .035 in. larger than the outside diameter of the guide and the slight cut into the head casting will cause no trouble.

To remove the valve guides install a special drift in the guide and drive the guides from the bottom side of the cylinder head. To install new guides, a special tool

(Continued on page 104)

# WHAT!...

# 18,000,000?

*Yes* 18,000,000 PROSPECTS!

Cash in on the tremendous, pre-sold replacement market for Moraine Engine Bearings . . . original equipment on the more than 18 million GM cars and trucks in use. Get your share of this *ready-made* market—18 million owners *pre-sold* on Moraine dependability and longer life.

## But that isn't all

Look at this: Moraine also makes available replacement bearings for other makes . . . for *almost every one* of the nation's more than 40 million motor vehicles. Stock MORaine ENGINE BEARINGS . . . tap this unlimited source of replacement bearing business *now!*

### THE MATRIX MAKES THE DIFFERENCE

Steel-backed middle layer (or matrix) of porous copper-nickel bonds mechanically and metallurgically with babbitt overlay to give increased embedability and greater resistance to fatigue.



Moraine Engine Bearings  
A United Motors Line



The Bearing High Compression Demanded

## DUREX-100

Original Equipment on Cadillac, Buick, Oldsmobile, G. M. C., Flxible and Other Leading Makes.

Today's high-speed, higher-compression engines call for an entirely new kind of engine bearing . . . and DUREX-100 is that bearing. It's a bearing tough enough to withstand the tremendously increased loads imposed by today's stepped up designs. DUREX-100 adds owners of high-compression engine cars to your list of pre-sold replacement prospects. Order Moraine Engine Bearings now from your United Motors Distributor.

## MORaine PRODUCTS

DIVISION OF GENERAL MOTORS  
DAYTON, OHIO

## Ring Job Notebook . . . Continued from Page 102

is needed. This tool is designed so that the flat on the tool plate rests on the top of the cylinder head while the molded portion which acts as a stop for the driving tool is toward the top. The guide is then driven into the head until the installer contacts the plate on the cylinder head.

**Assembling the valves in the head**—Place all the valves in their

respective guides, then place the springs over the valve stems. Make sure the bottom of the spring is in the recess of the head. Place the spring retainer in position and compress the spring. Install new rubber seal in the lower groove in the valve stem, making sure it is properly seated. Install keeper and release the tension on the spring.

Always check the oil seals to see if they are installed properly. This is done by first striking the ends of the valve stems to seat the valve keepers and compressing a suction cup over the spring retainer and the valve stem. If the oil seal is properly installed, the vacuum cup will stick to the spring retainer.

If there is no suction, it is an indication that the seal is broken and must be replaced again.

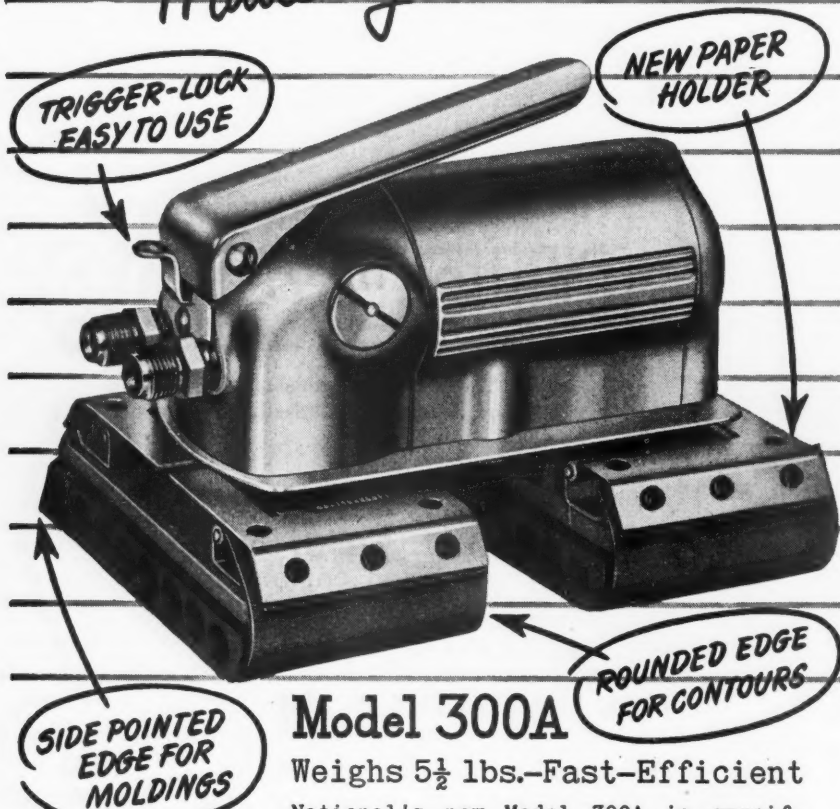
**Installing cylinder head**—Coat the cylinder head gaskets with a good brand of sealing compound and place over the dowels in the block with the side stamped "Top" up. Cement a new water pump flange gasket to the front face of the cylinder head. Install the head over the dowels and place eight short cylinder screws in the outside of the row-head holes and five medium length screws in the center row. Install rocker arms in position on the cylinder head. Notches on the ends of the rocker shaft should both point inward and down. Install four long cylinder head screws in the rocker arm shaft and the head. The front and rear rocker shaft brackets are drilled and threaded to hold the rocker arm cover screws. These holes must be on top when installing the rocker arm assemblies.

### Bureau of Standards Book Available on Antifreezes

The National Bureau of Standards has published a booklet entitled "Automotive Antifreezes," which goes into the sale about winter radiator solutions, both good and bad. The cleaning and preparation of a cooling system is also discussed. Antifreezes considered safe for ordinary use are ethylene, propylene glycol and the simple alcohol, such as wood alcohol. NPS research indicates that antifreezes made with a salt base or from petroleum distillates similar to kerosene are definitely harmful. The booklet can be obtained by sending 15 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C., requesting NBS Circular 474, "Automotive Antifreezes."

### MEMORANDUM

*New Automotive Wet Sander  
Made by National*



### Model 300A

Weights 5½ lbs.—Fast—Efficient

National's new Model 300A is specifically made for automotive sanding. It is extra fast . . . operating at 2500 strokes per minute. A specially designed pad doubles its efficiency, and can be used on different surfaces without change. Built-in water outlets provide efficient wet sanding. See your jobber, or write for details.



**NATIONAL AIR SANDER, INC.**  
2820 AUBURN ST., ROCKFORD, ILLINOIS



# When Dependable Performance means most!

● The consistently *dependable* performance of Ditzler Finishes is the chief reason Ditzler has grown to be the largest *exclusive* producer of automotive finishes. For nearly fifty years Ditzler Finishes have been used by most of the leading manufacturers of passenger cars, trucks and buses. This continuous preference is the best proof that Ditzler Finishes are better than any others for all your refinishing needs.



## You Can't Buy Better Black Enamel than DITZLER'S DQE-9000

● Now better than ever—Ditzler's DQE-Jet Black Enamel widens its margin of superiority over all other brands. It is a deeper jet black—it dries rapidly to a rich glass-like lustre—it hides exceedingly well—it has excellent "build"—it may be air-dried or baked and it has durability plus. Jobs finished in DQE-9000 bring repeat business.

DITZLER COLOR DIVISION, Pittsburgh Plate Glass Co., Detroit 4, Mich.



## Hot Spray . . . . . Continued from Page 51

ing, of course, adds to the quality of the job but is not essential. Thus the lacquer job can now be sold at a price far below the price of a cold lacquer job.

Some of the painting troubles previously encountered can be eliminated with the hot spray method. Blushing, for instance, due to low temperature of the

paint as compared with the temperature of the metal which it contacts, does not occur when the material is sprayed hot. The paint, of course, does cool down considerably before it hits the surface, but it is calculated to be at approximately room temperature at the time it hits the metal. Blushing is more common in cold, damp

weather but with hot spray atmospheric conditions present no problem. Also, with hot spray a good wet coat can be applied without sag.

As mentioned previously, a major advantage of hot spray painting is the virtual elimination of orange peel (due to lower spraying pressures). This means that on lacquer there is little or no need for compounding.

Another advantage of hot spray method is the economy. Less thinner, and sometimes no thinner, is used and less paint wasted. The reason for the saving in paint is that there is less over-spray due to low pressure. More of the paint at these lower pressures (25-35 pounds for lacquer and 35-45 pounds for enamel) goes onto the surface rather than into the surrounding air. This factor is especially important to the shop which has limited space and many other cars in the vicinity of the spray area.

Lower pressures also cause less solvent fumes, an important safety and health factor.

How does a repair shop or service department set up for hot spray painting, and how much does it cost? All that is necessary is the purchase of a heating device for the paint which range from about \$40 up. Since the paint must be at exactly the correct temperature for spraying, these devices are thermostatically controlled and are designed specifically for the job of heating  
(Continued on page 108)

### HEAVY DUTY RUBBER ARMOR-FLEX

# Splash Guards

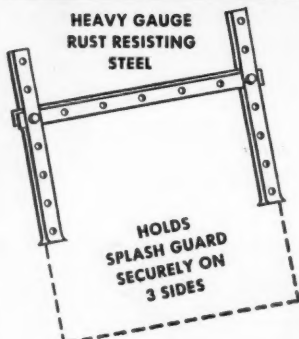


**FOR TRUCKS AND TRAILERS**

**SPLASH GUARD UNIVERSAL MOUNTING BRACKET**

Armor-Flex Splash Guards were designed and tested to meet the most rigid road conditions. They're made of heavy-gauge rubber and are available in two grades and three sizes. The Armor-Flex Deluxe Splash Guard is reinforced with woven fabric and has a brass-plated steel bar imbedded into the mounting edge. Borders are extra-thick for maximum strength. The Standard Splash Guard is Doan's economy type and will prove satisfactory for most road conditions. Both types meet the requirements of state codes. They're pre-punched for quick, easy installation.

**Doan**  
MANUFACTURING CORP.  
1761 LONDON ROAD • CLEVELAND 12, OHIO



Complete unit—specially designed to mount splash guards. Adaptable to fit any model truck or trailer.

### PAINT DEPARTMENT



"You know if we had one of these infra red ovens like those advertised in Motor Age we could hurry the jobs up some."

# Speaking of Smoother driving

... more than 25 years ago, GM began the research this ad tells your customers about—research in hydraulics that ended in GM's effortless automatic drives.

Of course it didn't actually end, because at GM there is no end to the trails blazed by research, engineering and production men—to make the GM key unlock greater and ever greater value.

Your customers are reading about this continuing program in "Key" ads like this one, in top magazines—usually in full color, often as a two-page spread.

## packages

stack well in freezer? If not, the packages falling. Also, the by stacks, making the food

maximum use of freezer space. Rectangular or square containers are better than round containers. If you're an important consideration.

## water's first fruits and

section of stalks, white woody centers. 5. Blanching for flavor and nutrients. Steam-blanch (cut up) 3½ minutes. 4½ minutes. 6. Chill 3 to 5 minutes. 7. A top-opening package is best for spears. Any type of carton is suitable for vegetable.

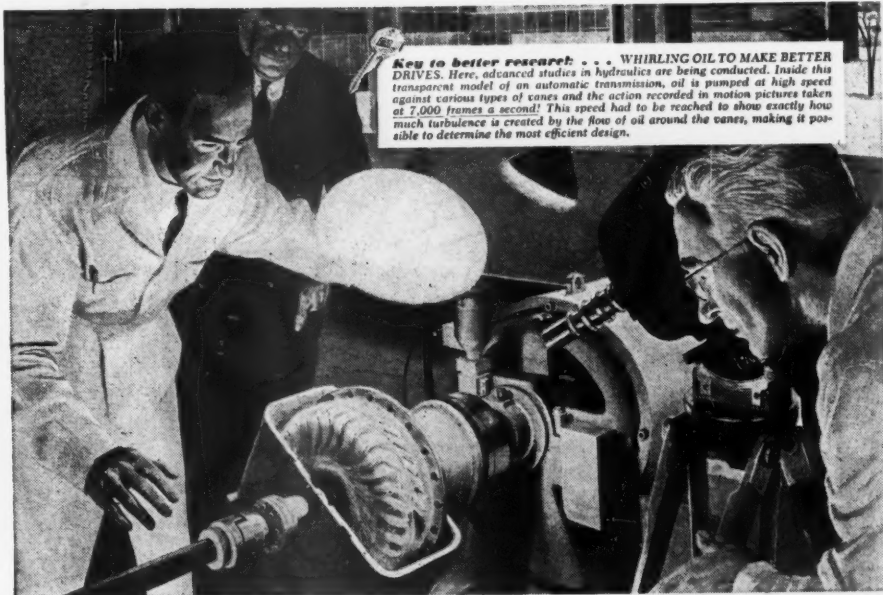
## Refinements

A more tender texture is obtained in spring. 1. Cut when leaves are tender. 2. Wash thoroughly in running water to rid of dirt. 3. Steam-blanch in boiling water for 2½ minutes. 4. Chill immediately in cold water for at least 5 minutes. 5. Squeeze out excess water. 6. Package in any type of freezing container.

## Peanut

Then as Huxley variety for freezing. New variety which is in regions where it may be difficult to grow. 1. Do not freeze old, tender, slightly immature. 2. Pod 4 or 5 pounds. 3. Water-blanch about 1 minute. 4. Chill immediately in cold water 3 minutes. 5. Fill any type of vegetable container full, etc. 6. Freeze immediately.

METTER HOMES & GARDENS



**Key to better research . . . WHIRLING OIL TO MAKE BETTER DRIVES.** Here, advanced studies in hydraulics are being conducted. Inside this transparent model of an automatic transmission, oil is pumped at high speed against various types of vanes and the action recorded in motion pictures taken at 7,000 frames a second! This speed had to be reached to show exactly how much turbulence is created by the flow of oil around the vanes, making it possible to determine the most efficient design.

## Automatic driving is out of this whirl

Few car owners realize how long it takes to develop an idea from the dream stage to a working reality.

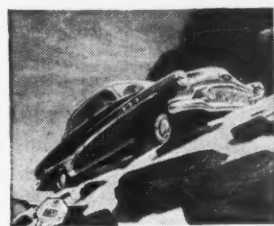
The automatic drive is a typical example. More than 25 years ago General Motors began to seek a new, simpler, smoother way of transmitting power from engine to wheels.

First it was a subject of long research in which new discoveries were made about the behavior of liquids in motion.

Then GM engineering took over, translated laboratory developments into scores of working models, weeded them out

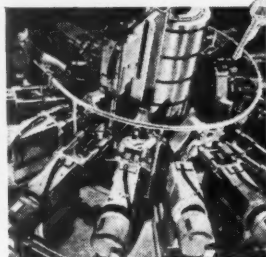
by many brutal tests to find the most practical. Finally GM production units worked out ways to manufacture them at low cost, to give you the automatic drives available on all GM cars—Powerglide, Dynaflo, and Hydra-Matic—plus heavy torque-converter drives for buses, military vehicles, and construction machinery.

This is a cycle that never stops at General Motors—on every phase of automotive advancement, from fuels to finishes. That is why the key to any General Motors car is your key to greater value.



## Key to better engineering

**TESTING ON THE TOUGHEST HILL OF ALL.** Before a new automatic drive is put into production, GM's engineers test it on Pikes Peak—almost 14 miles of relentless 10% grade and hairpin turns. The summit is 14,110 feet above sea level—which cuts horsepower in half. Here they test the newest automatic drives—in trials more wicked than you could meet in usual motoring—and make design improvements before manufacturing takes over.



## Key to better manufacturing

**ACHIEVING VOLUME THAT MEANS VALUE.** Getting a precision assembly like an automatic drive from laboratory to production line calls for high-speed methods of making them at low cost. Typical solution: this automatic 18-station drilling machine whose infallible electric fingers help form 108 transmission parts an hour with super-precision. Such equipment brings automatic driving to GM car owners at reasonable cost—and gives GM vital skills for defense work.

YOUR KEY TO GREATER VALUE—THE KEY TO A GENERAL MOTORS CAR



## GENERAL MOTORS

"MORE AND BETTER THINGS FOR MORE PEOPLE"

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC • BODY BY FISHER  
GMC TRUCK & COACH



# Hot Spray . . . . . Continued from Page 106

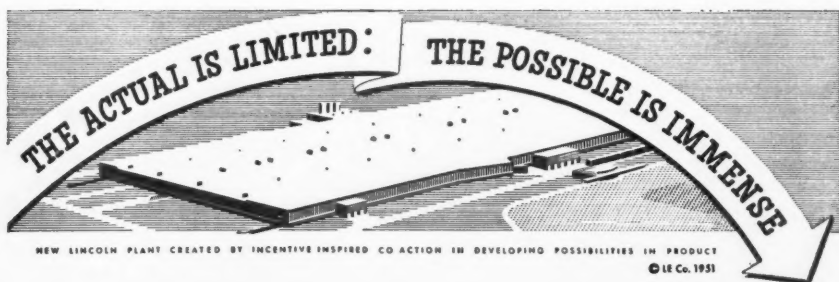
lacquer and enamel for spray painting. When properly used they present no fire hazards and will provide excellent results. The standard spraying equipment can be used, although for best results the supplier of the air gun should be consulted for special air cap recommendations.

Heating unit recommendations

vary considerably with the type of work done in the shop. For touch-up work, several types of heated cups, which fit directly on the gun, are available. In order to do work which requires more than the quart capacity of the cup, two or more cups would be needed in order that one can be in use while the other is heating. These units

are comparatively inexpensive and convenient for use on small jobs. Another heater consists of a hot plate on which a gallon can of paint is set. It is made with a large pouring spout which fits over the can and clamps onto the lower part. Having a full gallon of paint heated to correct temperature, this unit is suitable for complete refinishing jobs. Another unit which handles larger quantities of paint consists of a pot with a faucet. Also electrically heated, the paint can be immersed in water in the pot to maintain correct temperature, or the paint can be poured in directly.

Production type tank heaters are also available which supply

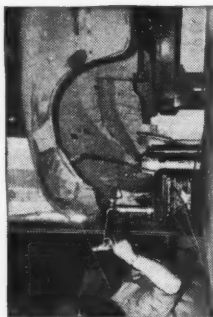


**"I turn out jobs easier and faster with my Lincwelder 60"**

*Reports Body Shop Owner*

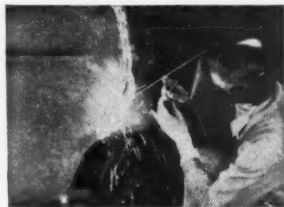
Our "Lincwelder" 60 sure helps us cut a lot of corners when it comes to getting rush repair jobs out the door. Whether it's just welding a tear in a fender or patching a badly damaged body, this little welder does the job like magic. On body soldering work too, there's a lot less distortion that cuts out much of the body finishing we had to do before we got our "Lincwelder." Actually, the welder paid for itself on the first couple of jobs. It didn't take any previous experience to learn to use it.

**AMERICAN BODY SHOP, Grand Rapids, Mich.  
Fred Buervenich, Proprietor**



**Fig. 3** Makes quick work of a torn fender. Fred Buervenich, proprietor of the American Body Shop, Grand Rapids, welds it in a jiffy with his "Lincwelder" 60.

## REPLACES DAMAGED SECTION



**Fig. 1** After cutting out torn fender with the "Lincwelder" 60, the replacement panel is welded in place and body solder is added using an electric arc torch.

## SAVES BODY FINISHING



**Fig. 2** Note minimum of body soldering because of less distortion when using the electric arc for cutting, welding and soldering.

**SAVES TIME . . . CUTS COSTS**

Write for free Bulletin 380 on "Lincwelder" 60 and "Fleetwelder" 200 Dept. 306

**THE LINCOLN ELECTRIC COMPANY**  
CLEVELAND 17, OHIO



the paint directly to the gun from the heated vessel. Many shops use a combination of the gun-type heater with the other types, so that the paint is maintained at the proper temperature while in use and at the same time a supply of hot paint is also available for re-filling purposes.

Preparation for a hot spray job is the same as for cold spray. Naturally, quality material should be used and a primer sealer should always be used, too, because of the rich solvent specified for hot spray work.

Thinning procedure varies somewhat according to the preference of the user and the type of material. While some shops eliminate the use of thinner with enamel, one pint of thinner to a

(Continued on page 110)

Mr. Independent—

This sign means  
**BUSINESS**  
for YOU...

because it will attract  
more FORD customers  
to your shop!



★ Over the years Ford owners everywhere have come to know that this familiar blue and white sign identifies the *right* parts for Fords. So when you display this famous Genuine Ford Parts sign, you let more Ford owners know that *you* are headquarters for the

parts they want. And that attracts profitable Ford service business you may be losing to shops "around the corner."

You also get the benefit of national advertising in LIFE, LOOK and other national magazines. Month after month these *selling* messages remind Ford owners to look for Genuine Ford Parts at Ford Dealers' and independent garages that display the sign. And that can mean you.

Mail this coupon now!

You'll find out how to get this profit-building sign. It costs you nothing—yet it's yours as long as you stock and use Genuine Ford Parts. Then get the extra Ford service business that means extra service dollars for you.



**FORD Division of FORD MOTOR COMPANY**

Parts and Accessories Sales Department  
FORD Division of FORD MOTOR COMPANY  
P. O. Box 658, Dearborn, Mich.

Please send me complete information on obtaining  
Genuine Ford Parts sign.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

## Hot Spray . . . . . Continued from Page 108

gallon is ample. With lacquer, only half as much thinner is used as with the cold application. A reduction of about 50/50 proves very satisfactory.

Spraying pressures also vary. When spraying hot lacquer using a standard air cap, pressure at the regulator should be 35 pounds. With enamel, 45 pounds. With a

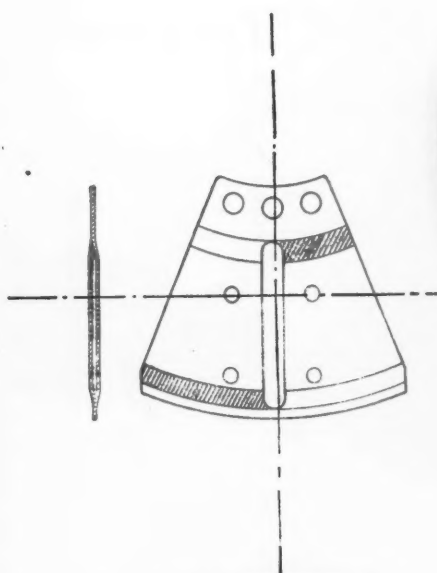
special tip, these pressures can be reduced by as much as 10 pounds. This lower pressure is recommended so that over-spray, splatter, etc., will be reduced.

Hot spraying technique is simple. With lacquer one application, a cross coat (first horizontal and then vertical), or a single coat, followed in about fifteen

minutes with another wet coat, provides a good finish. Also, one double or cross spray coat of hot lacquer equals four or five coats of cold sprayed lacquer. A good enamel job can be obtained with one single full coat.

The resulting finish in either case is smooth, deep and free of haze. As mentioned previously, the compounding generally associated with lacquer jobs is virtually eliminated with hot spray, and orange peel on both lacquer and enamel are reduced.

For all types of shops, large or small, hot application of lacquer and enamel not only opens new fields but also permits production of better refinishing at lower costs and in less time.



### PATENTED FLAT-TOP CUSHION

The flat-top construction of the Accurate Powerflex cushion distributes the wear evenly over the entire facing surface. High-spot contacts are completely eliminated. Effective cushioning action is assured for the entire life of the plate. And this exclusive Accurate design is a vital factor in making the Powerflex engage more smoothly and more efficiently than any other clutch plate made.

WRITE FOR DETAILS



There's a New Powerflex Clutch Plate  
in Every ReNu-Accurate Clutch Set

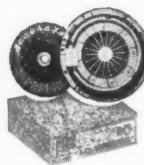


**Accurate** Parts Mfg. Co.  
12435 EUCLID AVENUE • CLEVELAND 6, OHIO



### Exclusive Features of the POWERFLEX CLUTCH PLATE

- Self-Aligning Hub Splines
- Flat-Top Cushion
- Spring Supports
- Safety Stops



### Federal Reserve Board to Crack Down on High Trade-ins

Crackdown may be imminent on the part of the Federal Reserve Board with respect to the practice of many dealers in allowing overly large allowances on old goods as trade-ins. The board has been increasingly disturbed, since Congress forced credit relaxation, at the growing practice of advertising "no cash down payment" when old units are turned in.

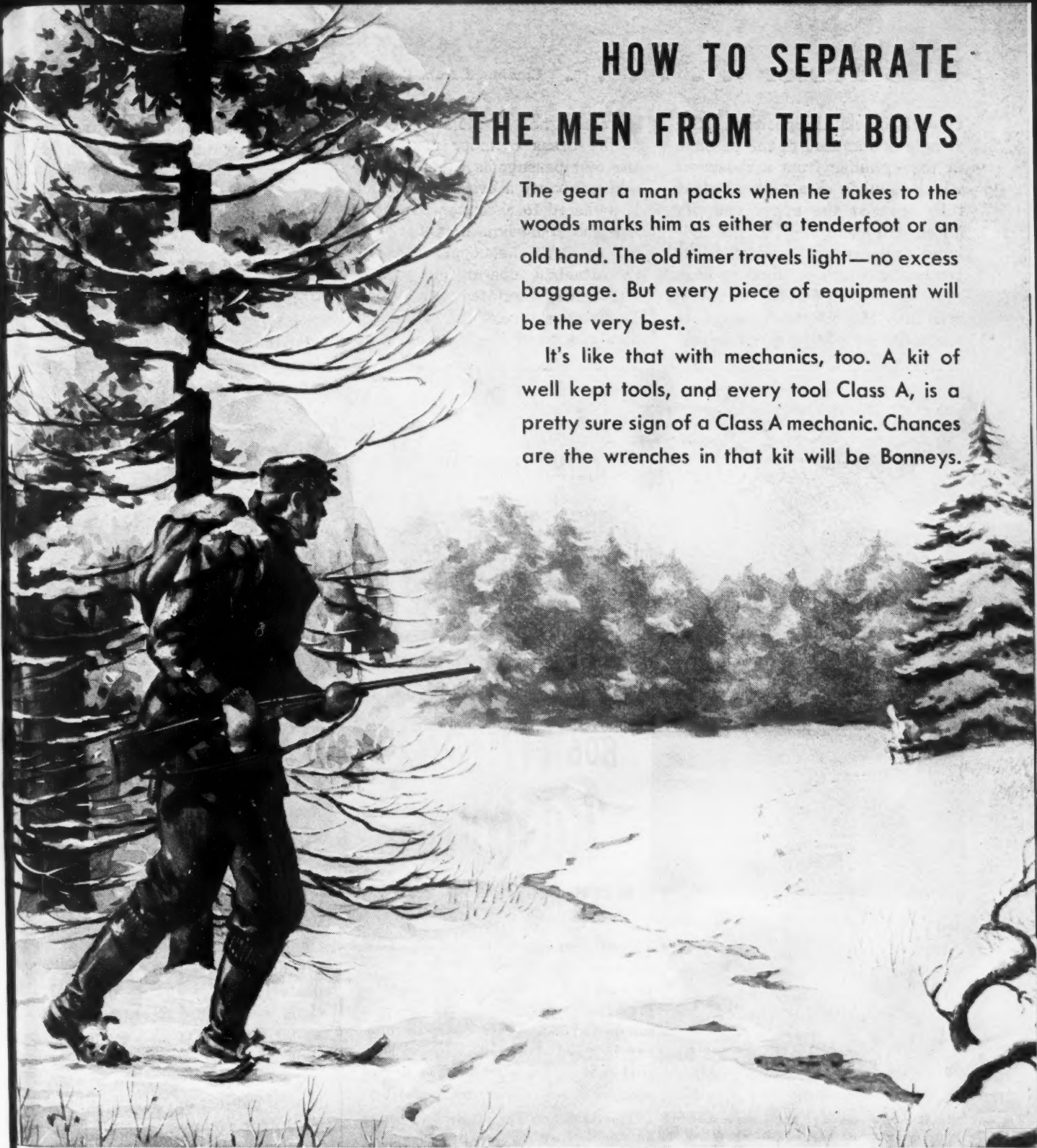
Taking the problem to the Capitol, board officials were told during a closed session of the Senate-House defense production watchdog committee that a return to such practices was neither the intent nor spirit of congressional action in demanding credit relaxation.



## HOW TO SEPARATE THE MEN FROM THE BOYS

The gear a man packs when he takes to the woods marks him as either a tenderfoot or an old hand. The old timer travels light—no excess baggage. But every piece of equipment will be the very best.

It's like that with mechanics, too. A kit of well kept tools, and every tool Class A, is a pretty sure sign of a Class A mechanic. Chances are the wrenches in that kit will be Bonneys.



*This is one of a series of spirited sporting scenes (in full color, without advertising) available on request. Write for your free set today.*

**"CHEAP TOOLS ARE FOR CHUMPS"** say the men who know tools best—America's ace mechanics. And the best recommendation for Bonney Wrenches is the kind of men who use them. As thousands of good mechanics can testify, for lightness, strength, balance and precision you can't beat a Bonney.



**BONNEY FORGE & TOOL WORKS, ALLENTOWN, PENNSYLVANIA**

crystals blocks the passage. The sample is admitted to the passage in the cylinder from a reservoir which is made of a vertical glass tube open at the upper end, its lower end connected to the cylinder by means of a rubber stopper and a length of brass tubing. Flow of the liquid from the reservoir into the 1.5-mm passage is controlled by sliding a rod in and

out of the hole in the stopper.

The brass cylinder containing the test passage is cooled by inserting it into a brass tube which is soldered to a copper box filled with solid carbon dioxide ("dry ice"). Both the copper box and the attached tube are enclosed in a thermally insulated wooden box. The temperature of the cylinder is obtained from the dial of a bi-

metal thermometer whose stem passes through the center of the cylinder. As the temperature rapidly falls below the freezing point of water, the valve in the reservoir is opened at about 10-degree intervals until no more liquid flows from the exit tube in the brass cylinder. The cylinder is then removed from the cold tube and promptly placed in a hole provided in the wooden cover of the insulated box. As the cylinder slowly warms, the exit tube is watched, and when the second drop of liquid falls, the temperature is read. This temperature is the lowest at which the liquid being tested will circulate through the passages in a radiator.

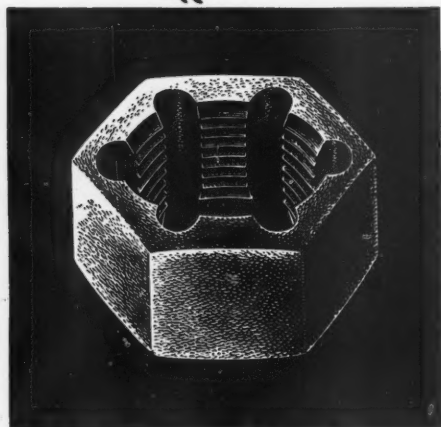
The determination requires from 3 to 6 minutes, depending upon the freezing point of the solution. Approximately two pounds of dry ice will suffice to keep the device operating for 8 to 10 hours.

Tests were made at NBS on antifreeze solutions obtained from a number of car owners selected at random. The maximum difference between readings made on six of the solutions by three different operators using the new antifreeze testing device was 2 degrees F for a given solution, and the average spread was 1 degree F. The minimum protection temperatures found were usually slightly below the temperatures at which the various solutions first show formation of ice crystals. Estimates given by service stations for the protection afforded by the solutions were found to vary as much as 30 degrees from the readings obtained with the NBS device.

Automotive antifreezes have been a subject of investigation at NBS for many years. These studies, performed largely for other Government agencies, have included not only simulated and actual service tests of antifreezes but also basic investigations of the physical and chemical properties of antifreeze compounds and of the materials used in the cooling system of a car. As a result, NBS has been able to advise motorists on the proper use of antifreezes and to warn them of the harmful effects of certain antifreezes.



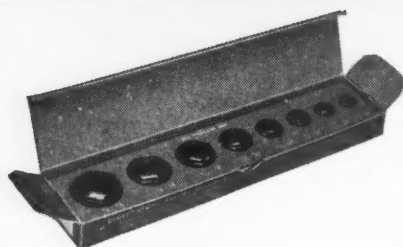
Something **NEW**  
has been added!



**Herbrand's**  
**TOOL-OF-THE-MONTH**

NO. 806 **Thread**  
**Restorer**

**WITH U.S.S. THREADS**



Kit No. 806 contains  
a complete set of  
eight sizes . . . U.S.S.  
1/4", 3/8", 1/2", 5/8",  
3/4", 1", 1 1/4", 1 1/2".

Kit No. 808 contains  
a complete set of  
eight sizes . . . S.A.E.  
1/4", 3/8", 1/2", 5/8",  
3/4", 1", 1 1/4", 1 1/2".

The great popularity of Herbrand's Thread Restorers with S.A.E. threads has resulted in the addition of No. 806 kit with U.S.S. threads. Each die is the same size as the matching nut . . . just run on and off and thread is restored on any battered, damaged or rusted bolt, stud or shaft. No special holder or tool required . . . uses regular wrench or socket.

The Herbrand Thread Restorer is *not* oversize—it chases out the damaged thread but does not recut the good thread.

The No. 806 comes complete in attractive kit of 8 sizes from 1/4" to 3/4" U.S.S. thread. They are accurately machined, heat treated and hardened to do a perfect job.

mechanic's net \$3.50 per set

See the No. 806 Thread Restorer kit on the Tool-of-the-Month display board at your Herbrand distributor or write us.



**Herbrand Tools**  
FREMONT 7, OHIO  
THE BINGHAM-HERBRAND CORPORATION





# 5,600 FREE TON-MILES OF PAYLOAD

...thanks to **BORG-WARNER** engineering



Any weight that can be saved in a truck means that much *less* dead weight ... that much *more* payload.

Borg-Warner engineers determined that universal joints could be made 34% lighter without sacrificing quality, accuracy of balance or smoothness of operation. Roller bearing universal joints made by B-W's Mechanics Universal Joint Division thus eliminate 28 pounds of dead weight ... allow 28 pounds *additional* payload each trip.

During the average life of a heavy duty truck this means 5,600 *extra* ton-miles of payload ... as much as \$280 additional revenue.

This is one more typical example of B-W's standard: "design it better—make it better." In this way, with literally scores of precision parts, Borg-Warner engineering and production serve the automotive industry every day.

**B-W ENGINEERING MAKES IT WORK—**

**B-W PRODUCTION MAKES IT AVAILABLE**

Almost every American benefits every day from the 185 products made by

## **BORG-WARNER**



THESE UNITS FORM BORG-WARNER, Executive Offices, Chicago: BORG & BECK  
BORG-WARNER INTERNATIONAL • BORG-WARNER SERVICE PARTS • CALUMET STEEL • DETROIT GEAR  
DETROIT VAPOR STOVE • FRANKLIN STEEL • INGERSOLL PRODUCTS • INGERSOLL STEEL • LONG MANUFACTURING  
LONG MANUFACTURING CO., LTD. • MARBON • MARVEL-SCHLEBLER PRODUCTS • MECHANICS UNIVERSAL JOINT  
MORSE CHAIN • MORSE CHAIN CO., LTD. • NORGE • NORGE-HEAT • PESCO PRODUCTS • ROCKFORD CLUTCH  
SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR • WARNER GEAR CO., LTD.



## Body Shop Hints . . . Continued from Page 49

of the completed car. We found that this works much faster than brushing it on and we have developed a good method for protecting the newly painted wheels from the compound. Cut a sheet metal disc fifteen or sixteen inches in diameter, depending upon the size of the wheel, place it over the wheel and spray. No time is lost in masking and the disc protects the wheel

from the compound. Spraying provides a smooth finish to the rubber. *Jim Newcomer, Ellis Automotive Service, York, Pa.*

### Tuck in Seat Cover Installation Saves Time

I find that when installing the seat cover on a four-door car, it is quite a job finding the screw holes

for the ash tray and the hand rope. Before the covers are installed, I take the ash tray and the rope off, then put the screws back. After installing the covers, you can easily find the head of the screws and cut just enough so you can get them out. It doesn't harm the covers because the screws are covered. *John R. Rhoades, 408 West Indiana, Wayne, Nebraska.*

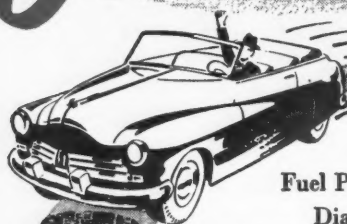
### Using Lead Filings Reduces Materials Cost in Body Work

With the lead and the tin market getting tighter I thought some of the trade might be interested in a little stunt I discovered. Before grinding or filing body lead, I sweep the floor under the work first. In this way I save the lead dust and filings. This I use for tinning body work. Heat the work and swab with acid, then dip a rag in lead dust and apply in the usual way. This certainly cuts the lead cost. *Geneva Service, John Miller, Clay St., Geneva, Ohio.*

### Easy Method for Drilling Hardened Steel

I have an idea which has troubled many mechanics. It is that of drilling hard steel such as spring leaves and bumper face bars. Just use ordinary Le Page Glue and drill. Keep steady pressure on the drill and use plenty of glue on the drill tip and it will drill as easy as wood. *Joe Simons, Joe Simons Auto Repair, 7075 N.E. Glisan St., Portland, Ore.*

**50,000 miles  
OF CUSTOMER GOOD-WILL  
Guaranteed!**

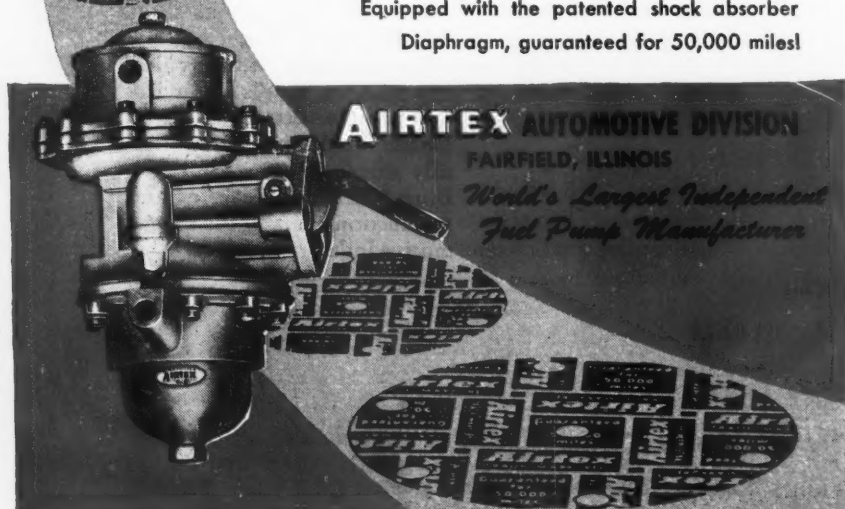


Every time you install an Airtex Fuel Pump with the 50,000-Mile Guaranteed Diaphragm, you give a motorist the three things he wants most . . . easy starting, quick get-away, greater mileage! That's why one satisfied customer tells another, why you build steady business through good-will . . . why you make more sales and profits with Airtex!

#### ORDER FROM YOUR JOBBER NOW!

Also ask for Airtex Anti-Pulsation Fuel Filters. Self-cleaning, porous metal filter disc removes dirt, lint, water.

Equipped with the patented shock absorber Diaphragm, guaranteed for 50,000 miles!



**AIRTEX AUTOMOTIVE DIVISION**

FAIRFIELD, ILLINOIS

*World's Largest Independent  
Fuel Pump Manufacturer*



*"Doctor — Doctor! Mr. Burdine  
drank his alcohol rub!"*

# For Those Hard-To-Fit Connections

## Thermoid

### "Redi-Curv"

### Radiator Hose

**Flexible as a Spring!**

**Curves to Fit Any Car!**

**Makes Hose Installation a Snap!**

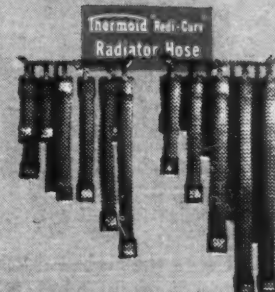
Here's the hose that turns "stinkers" into easy, profitable jobs! A single installation will prove to you that it's the hose you can't do without.

**Here's what this hose means to you . . .**

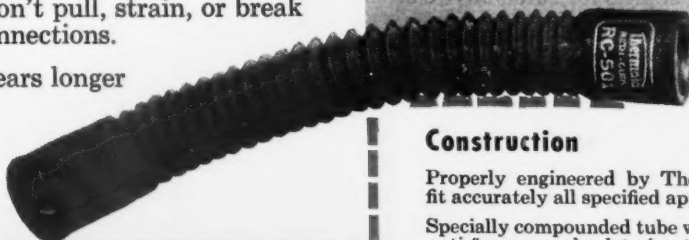
- Easier to put on because of tapered ends—installs in less time than curved hose.
- No skinned knuckles.
- Easy to fit lower radiator connections.
- Fewer pieces to stock.
- No cutting—no waste.

**Here's what this hose means to the car owner . . .**

- Absorbs motor vibration.
- Prevents radiator damage. Won't pull, strain, or break connections.
- Wears longer



**16 pieces cover popular cars and trucks from 1936 to 1951**



## Thermoid

Thermoid Company • Trenton, New Jersey

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts.

### Construction

Properly engineered by Thermoid to fit accurately all specified applications.

Specially compounded tube withstands anti-freeze and deterioration from radiator chemicals.

Coiled wire reinforcement adds strength and flexibility; prevents collapse.

Durable cover withstands aging and cracking.

Ask your jobber salesman to show you this new hose.

# Kester Solder



Kester Radiator Solder, Flux-Core, a specialized solder with a higher tin content (50%) and super activated flux, is now available to the trade. The finest solder made for fast, quality radiator work.

## Uniform

All Kester Solders are made only from the finest grades of tin and lead commercially available. Fluxes are chemically and scientifically correct. Kester's uniform flux content assures greater dependability.

## Efficient

Using the right solder for the job increases efficiency, speeds up the work. Kester Radiator Solder for radiator work; Kester Acid-Core Solder for general work; Kester Plastic Rosin-Core and "Resin-Five" Core Solders for automotive electrical work.

**Kester Solder Company**  
4201 Wrightwood Ave., Chicago 39  
Newark, N. J. Brantford, Canada

**KESTER  
SOLDER**



The Mechanics Standard since 1899

## Clearing House

Continued from Page 55

### Tried Everything, Mercury Still Jumps Out of Gear

We have a 1950 Mercury which jumps out of gear.

#### What We Did:

We installed a new frame, transmission case, pilot shaft and bearings. Replaced the clutch plate, pressure plate and throw-out bearing. Still no improvement. The flywheel looks good but the bell housing was bent a little where it bolts to the engine. Installed another type clutch disc, but now we can't get a good adjustment. If we adjust it to specifications, the gears clash, and if we remove the play to where it will shift, the throwout bearing will spin at all times. **Submitted by:** Patrick Rizzi, Economy Auto Body & Repair, 1355 West Farns Road, Bronx, N. Y.

#### We Suggest:

I believe the trouble is in the flywheel housing being out of line. The best method of checking this is to mount a dial gage to the flywheel bolts and have the indicator rubbing in such a way that, when turning the flywheel, it will point out the high and low spots on the housing. If you can find the high or low spots, you can shim the housing to make up for this. The reason for the new clutch not releasing when it is to the proper adjustment is that the transmission pilot shaft is out of line with the flywheel. Before removing this unit, loosen the housing and add shims at various locations for a try and I think you may be able to center it without pulling it out of the car. On assembling these units, be sure no pressure is allowed on the clutch plate, as this will twist the plate and cause it to stick on the spline, causing hard shifting.

### How to Increase the Power of a Pontiac 8

How can we increase the horsepower of a 1949 Pontiac 8 with





**THIS BABY REALLY SELLS**  
*for* **18,000 Dealers!**

**Rankin**  
**AMERICA'S FINEST SEAT COVERS**

**ANNOUNCING  
ANOTHER  
EXCLUSIVE RANKIN  
"FIRST"**

Famous Rankin SUPER model now available with beautiful new SAXON PATTERN JASON SEALTUFT STITCH. LESS Quilted Plastic. New eye-appeal, buy-appeal in the quality leader of the Rankin value line.

Cash-in on the profit records of 18,000 dealers who sell more . . . make more on auto seat covers with the revolutionary Rankin Profit Plan. This sensational plan gives you MORE to sell . . . truly amazing values. Seat Covers that look better, fit better, wear better . . . Yet sell at low prices that put you way out in front of local competition. Really bigger dollar values your customers will instantly recognize for easier, faster sales—more seat cover profits than ever before.

### DELUXE FEATURES AT POPULAR PRICES!

- Distinctive fashion-styling.
- Smart, new patterns in popular plaids, checks, candy stripes.
- Gorgeous colors.
- Nationally advertised LUMITE woven plastic.
- Plastic coated fibres.
- Luxury trims, novelty trims.
- Lock stitching throughout.
- Extruded plastic welts.
- Superior tailoring for smooth, snug fit.
- Models for every car, every car owner.

*Now* SEE why 18,000 dealers have switched to Rankin for BIGGER seat cover profits. Mail coupon today for prices, samples, full details on the Rankin Better-Profit Plan for you.

### RANKIN MANUFACTURING CO.

CEDAR FALLS, IOWA

WICHITA FALLS, TEXAS

BERKELEY, CALIFORNIA



**MAIL  
TODAY**

#### RANKIN MANUFACTURING COMPANY

Cedar Falls, Iowa

Dept. MA

Please send me prices, samples and your bigger profit plan on the Rankin Seat Cover Line.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....STATE.....

## Clearing House . . . . Continued from Page 116

a conventional shift. The engine seems to be a little on the lazy side and I intend to do a complete overhauling on the car. Submitted by: Paul Hatler, Davidson Motor Co., 846 State Street, Kansas City, Kansas.

### We Suggest:

Start out by doing a good valve job; that is, grinding the seats

and refacing the valves. Also plane .030 inch off the cylinder head to increase the compression. While this engine is apart, make sure the manifolds are thoroughly cleaned, and there are no rough spots in them. Also remove the carburetor and disassemble it and, when putting it together, install a one step richer metering rod. This will increase your power. If

the engine needs reboring, bore out .060 inch and this will add to your horsepower also.

## Buicks Have Bad Ping On 70 Octane Gas

Two of our 1949 Buicks have developed a very hard pinging. Both cars are mechanically sound. The octane rate of the gasoline is 70.

### What We Did:

Gave the engines a complete tune-up. Checked the timing and set according to factory specifications. Still the ping persists. Submitted by: J. Greenshlag, Agricultural Eng. Co. of Israel, Ltd., 48 Harbour St., P.O.B. 306, Haifa, Israel.

### We Suggest:

These cars should have at least a gasoline octane rating of 84 and not 70. The thin gasket which is in there now is .015 inch thick, but Buick manufactures one which is .050 inch thick. My advice would be to order some of these .050 inch thick ones. If not, you will have to have them made over there. After installing this thicker gasket, your pinging trouble will be corrected. When making this change it will be necessary for you to change the ignition timing slightly.

## NADA Committee Offers Public Relations Advice

The October release of NADA's Employer-Employee Relations Committee contains some excellent advice when it reminds dealers to emphasize to all employees: 1) that every employee contributes favorably or unfavorably to the public's opinion to your place of business. 2) That every employee suffers if any one employee creates customer dissatisfaction because of discourtesy, dishonesty, unfair or unsatisfactory treatment. 3) That benefit from the money spent by the firm to bring in customers can be sacrificed if employees fail to handle customers properly. 4) That all employees may be judged by the customers' good or bad opinion of any one employee.

# The HEART of Your Automotive Machine Shop

The STORM-VULCAN No. 15 crankshaft grinder is outstanding for high production, quality work and economy. That's why it's the heart of so many automotive machine shops throughout this country and abroad. Investigate the many advantages of the No. 15—in the new catalog just off the press.

SEND FOR FREE CATALOG *Today*

New features and advantages are fully described in new catalog.

Name

Firm

Address  City  State

**STORM VULCAN**  
INCORPORATED  
2504 COMMERCE ST. DALLAS, TEXAS



was  
my  
face  
red



...when Mrs. Smith almost hit a school boy!

**Handy cabinet at no cost  
with fast-selling assortment**



For lube stations



For repair and brake shops

Experience shows it is very difficult to remove an oil seal without damaging it beyond further safe use. Keep an assortment of National Oil Seals handy so you can put in a new seal every time you take one out. National has two assortments available; one contains front wheel seals only and the other both front and rear wheel seals for the most popular cars. Every seal is a fast-selling number. You get the cabinet at no cost when you buy the initial assortment. See your jobber about it now.

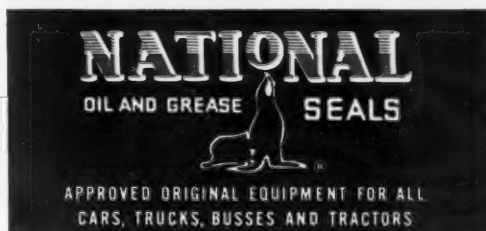


Support this  
industry wide  
program



*Install a new oil seal  
whenever you take one out!*

— CAR MANUFACTURERS RECOMMEND IT



**NATIONAL MOTOR BEARING CO., INC.**

General Offices: Redwood City, Calif.

Plants: Redwood City, Calif.; Van Wert, Ohio

2291



## New Products . . . . . Continued from Page 66

back when pressure is removed. The tip is protected against damage to the battery separators. The overall length of this filler is 6½ inches and the bulb holds 6 fluid ounces. An overflow control prevents complete draining of solution which exposes and damages battery plates and insures proper electrolyte level at all times.

### 444. Piston Ring Set

Wilkening Manufacturing Company announces that Pedrick "A" Formflex piston ring sets, featuring the new Formflex CS8 oil rings are now available for Plymouth, De Soto, Dodge, and Chrysler vehicles. According to the manufacturer, these rings compensate for irregularities in piston grooves

axially and for taper and distortion in cylinders radially. It also provides a complete seal at the piston groove sides as well as at the cylinder walls. The feature of this ring is a new type expander called the "Equalizer." It is claimed to deliver absolutely uniform pressure all the way around the ring and to be completely independent of groove depth. The ring rails are chromed for longer life and the all-purpose application makes the ring suitable for worn, rebored, or resleeved engines.

### 445. Battery Charger

Associated Equipment Corporation announces a new 80 amp. Hartman rapid charger, designated as the Model RG-80. It has a venturi-type, unrestricted cooling system and a specially designed transformer which is claimed to give the charger long life. This machine is also equipped with a circuit breaker which protects the

## Pick Factory Bonded Brake Shoes

Increase profits and speed up brake work in your shop with the Pick Shoe Exchange Plan. Pick *Factory Bonded* shoes are ready for immediate installation . . . no waiting . . . no lost time!

All Pick Exchange Shoes are completely reconditioned: cleaned, degreased, realigned, repainted and resurfaced. Genuine Pick linings are factory "bonded-on" under accurate control . . . and are precision ground.

- 1 ONLY FACTORY BONDING AS DONE BY PICK ASSURES SHOE REALIGNED LIKE NEW — every shoe is re-aligned on the same hydraulic presses used to make new shoes.
- 2 CONTROLLED BONDING — heating and cooling factory controlled — human "errors" eliminated.
- 3 RIGID TESTING — shoes tested for broken welds . . . bonds tested at 100% overload.

Ask Your Jobber About the Pick Shoe Exchange Plan

OR MAIL THIS COUPON

OTHER PICK PRODUCTS



OIL FILTER



FILTER CARTRIDGES



EMERGENCY BANDAGE



UNLINED SHOES

PICK MANUFACTURING CO.  
12 ALAN STREET, WEST BEND, WIS.

Please send me complete information on the Pick Shoe Exchange Plan.

Name

Address

City  State



rectifier against overloads and line surges. A balanced spring time clock assures a safer charge and automatic shut-off at the end of the charge. Up to six batteries at one time can be hooked up for slow overnight charging. The cabinet for this charger is 14 inches wide, 15 inches deep, 27 inches high and weighs only 58 pounds.

(Continued on page 122)



"I proved to myself that there's  
**50% MORE PROFIT**  
 IN  
**LION Nokorode**"

**UNDERCAR SEALER AND SILENCER**

**"Concentrated Lion Nokorode gives me  
 50% more profit on each drum!"**

Most ordinary undercoatings have a big percentage of solvent. When sprayed 1/8" thick they dry about 1/16" thick. Lion Nokorode *sprays* 1/16" thick—*dries* about 1/16" thick. Result: you do 50% more cars per drum! Yet Nokorode costs no more.

**"Lion Nokorode is easier, quicker  
 to apply—saves labor costs!"**

Nokorode is *uniform* for smooth application. It's *homogenized*—won't clog guns. That means you do *more* jobs at *less* labor cost. It's *naturally black*—no useless coloring added.

*Made and Guaranteed by*

**LION OIL COMPANY**

**EL DORADO, ARKANSAS**



**LION Nokorode**

IS NATIONALLY ADVERTISED IN

THE  
 SATURDAY  
 EVENING **POST**  
 AND **TIME**

**Powerful, Consistent Advertising  
 That Pre-sells Your Customers!**



**"I clipped this coupon for full  
 details on Lion Nokorode's  
 profit plan!"**

LION OIL COMPANY, El Dorado, Arkansas

Please send me complete details on how I can increase my undercoating profits with Lion Nokorode Undercar Sealer and Silencer.

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Brand of undercoating I am using now, if any \_\_\_\_\_

## New Products . . . . . Continued from Page 120

### 446. Winter Front

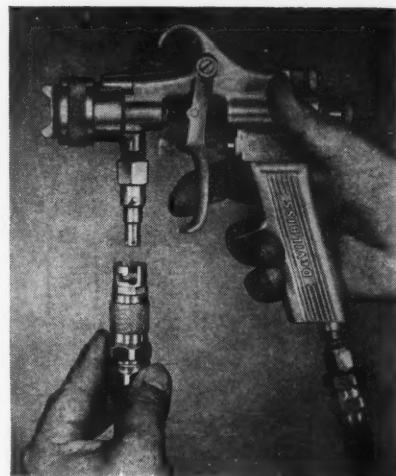
Winterfront, Inc., is distributing a new all metal Winterfront for cars, trucks and buses. It is automatic in operation, controlled by thermostatic action so that it automatically opens or closes the louvres to keep the engine at proper operating temperature regardless of outside temperatures.

Named "Weathervane," this device is said to provide quick heater warm-up on the coldest days and allow faster cold starts.

### 447. Hose Connector

The DeVilbiss Company is producing a light-weight fluid hose connector which makes it possible for the spray gun to be switched

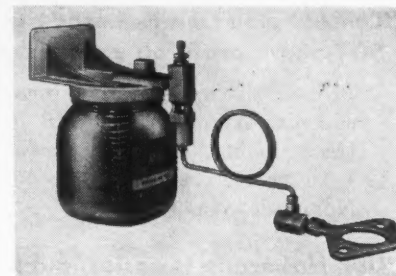
from one color to another with a quick twist. This connector is self sealing because of a spring type, ball valve set against a synthetic rubber seal. With the con-



nectors locked in place the valve is open for use. A special rubber seal is said to be impervious to paint, solvents or other materials used in spraying. Designed for use with  $\frac{3}{8}$  inch fluid hose, the device is designed to save time when switching from one color to another.

### 448. Upper Lubricator

The United States Avix Co. is producing the Avix Vapor Master, an automatic upper lubricator designed to admit tune up oil into the upper cylinder region of automotive industrial, and marine engines. Among the features of this unit are a full view sight feed which provides instantaneous posi-



tive adjustment of the oil flow, an adjustment which limits the maximum of oil that can be metered through the lubricator, a constant oil flow which provides for the same amount of oil at six inches of vacuum as at twenty-five inches and more, and an oil vaporizer that admits oil to the manifold in an atomized "vapor fog."

(Continued on page 124)



*Depend on Thomson  
—the most complete  
line for cars and  
trucks of all makes!*

**"Electro-Fused"**  
FOR EXTRA DEPENDABILITY

● For quality, coverage and service, depend on Thomson. Thomson's line is the most complete in the business—including 21 heavy-duty numbers, plus complete coverage of cars and light trucks. And every stat is "electro-fused" by heat induction for extra accuracy, dependability and long life. Ask your NAPA Jobber!

STANDARD-THOMSON CORPORATION  
DAYTON 2, OHIO





**DeVILBISS**



## CONSIDER THIS FACT...

Not only is "appearance service" becoming one of the profit leaders in the trade, but it is also a steady year round business that's here to stay. You'll cash in most on this profitable trend with DeVilbiss products—Spray Equipment, Exhaust Systems, Air Compressors and Hose.

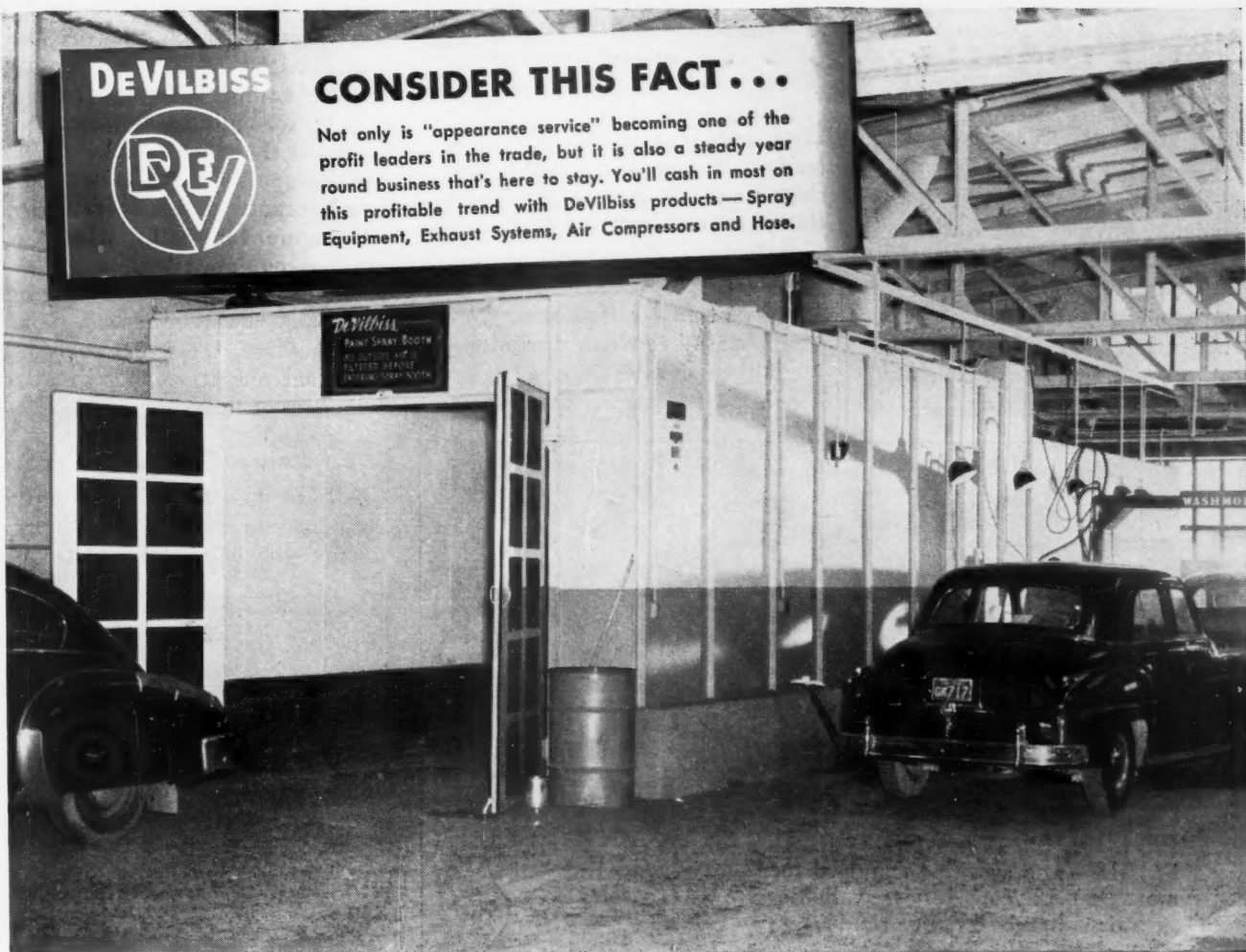


Photo Courtesy Tag Galyean Inc., Charleston, W. Va.

## READY TO PRODUCE ANOTHER PROFITABLE PAINT JOB

In a matter of minutes, another vehicle will be getting a professional refinish in the DeVilbiss Spray Booth shown above.

This progressive shop has streamlined its refinishing operations with a DeVilbiss-equipped paint shop. It advertises and specializes in "appearance service" for car owners. And records prove that appearance services can well account for one-

third or more of service department volume!

You can increase your profits, using DeVilbiss products—Spray Equipment, Air Compressors, Exhaust Systems, and Hose. DeVilbiss equipment easily handles 8-10 complete paint jobs a day, with professional results. They enable you to duplicate the original factory finish on automobiles, trucks or buses.

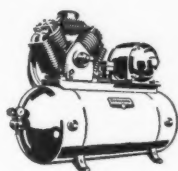
These customer-pleasing jobs result in valuable word-of-mouth advertising and attract customers to your other services, too.

Your nearest DeVilbiss distributor or Branch Office will gladly give you expert advice. Contact him now!

### THE DEVILBISS COMPANY Toledo, Ohio

Windsor, Ontario • London, England  
Santa Clara, Calif.

Branch Offices in Principal Cities



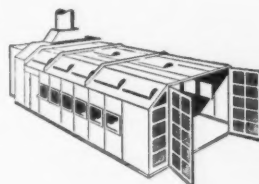
Air Compressors



Hose and Connections



Spray Guns



Spray Booths

FOR BETTER SERVICE, BUY

# DeVILBISS



## New Products . . . . . Continued from Page 122

### 449. Electric Wiper Motor

Signal Manufacturing Company is producing a Dual Electric Windshield Wiper Motor with an automatic safety clutch and automatic parking. This is said to be a universal replacement motor for practically all vacuum motors operating two wiper blades. The unit is available in both six and twelve

volts and is supplied with long leads and comes packaged with switch and all necessary installation parts and instructions.

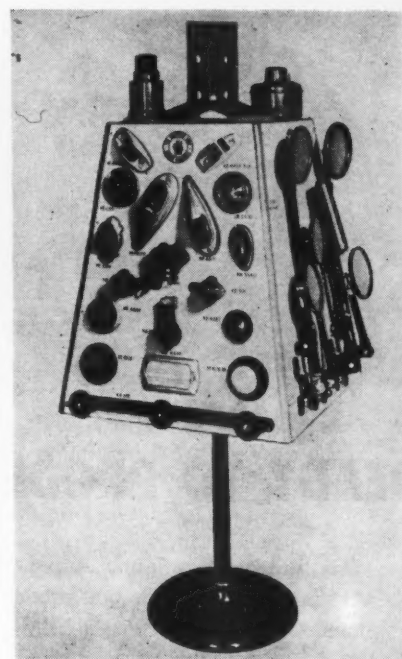
### 450. Snow Plow Lift

The National Lift Company, division of Gar Wood Industries, Inc., have developed a new hydraulic lift designed for use on

truck mounted snow plows. The manufacturer of this lift claims instant acting controls from a push button on the dash which can be easily handled by the truck driver alone. The lift is actuated by a hydraulic pump, operated by the engine fan belt. Also the pump is equipped with a clutch which permits the pump to run only when power is needed. The manufacturer states that such intermittent operation adds greatly to the life of the equipment.

### 451. Lamp Display

K-D Lamp Company is currently featuring its new K-D 5 Super Display with 54 of the most popu-



lar K-D Saftee Products mounted on four panels. Overall height is 56 inches. It occupies 4 sq. ft. of floor space.

### 452. Bearing Catalog

The Federal Bearings Company is releasing its Clutch Release Catalog No. 2, which is presented in five sections. It includes twenty-three years of clutch release bearing applications including 1951, on all automotive and farm equipment. There is a numerical listing with all applications on each bearing. The third section illustrates all complete clutch bearing assemblies and sections four and five include interchange and measurement information.

(Continued on page 126)



*presents*

## the RIGHT SIZE for a refill!

**EIS SUPER "40" (moderate) BRAKE FLUID** — the accepted standard for more than 12 years, is now available in a new, handy 8 ounce size!

It's just right for a refill because most cars use between five and eight ounces. Typical of EIS super quality, this brake fluid meets SAE moderate duty specification R72 and is miscible with all other standard brake fluids.

*Check your stock — have this handy size on hand. Order today!*

**EIS AUTOMOTIVE CORP., MIDDLETOWN, CONN.**





**EIS SUPER "40" is also packed in pints, quarts, gallons and drums.**

**And for heavy duty, be sure to use EIS SUPER "50". Packed in all sizes (except 8 oz. bottles.)**

*Ask Your Jobber or Write Us Direct*

CABLES  
• FLUIDS  
• PARTS



**The BRAKE PARTS line**

KITS  
• TOOLS  
• CYLINDERS

he  
ms  
a  
an  
ck  
ed  
by  
he  
ch  
un  
he  
in-  
tly

ly  
per  
pu-

ated  
t is  
. of

any  
ease  
nted  
nty-  
ear-  
l, on  
quip-  
list-  
each  
lus-  
ring  
and  
nea-

(26)

1951

Your Chevrolet Dealer—  
Your Partner in Service

# CAN HELP YOU KEEP YOUR CUSTOMERS HAPPY



Your local Chevrolet dealer is ready, willing and able to help promote your customers' satisfaction in two ways. First he has a balanced stock of Chevrolet parts available to improve the efficiency of your operation. And, second, your Chevrolet dealer's personnel is specially trained in service problems similar to yours. Both of these assets are at your disposal. Call on your Chevrolet dealer today!



*FOR YOUR BEST DEAL... DEAL WITH YOUR CHEVROLET DEALER*

*1 out of 4*

## IMPORTANT FACTS for independent garage men

You're sure of a large, continuing demand for the parts you obtain from your Chevrolet dealer—because more than one out of every four vehicles on the road today is a Chevrolet. Be prepared for this constant, profitable service market. Order Chevrolet parts from your Chevrolet dealer today.



## New Products . . . . . Continued from Page 124

### 453. Spur Gear Hoist

Coffing Hoist Company is featuring the Challenger, a spur-gear hoist which is said to incorporate new design innovations. This product is available in ½ and 1 ton capacity. The entire unit, including standard length of high strength coil chain, for an 8 ft. lift, weighs 39½ pounds. Resis-

tance to shock load breakage are said to be gained by the use of formed steel plate in the housing in place of the usual common cast aluminum alloy. The back plate is laminated to give extra rigidity for supporting the hoist mechanism. This plate and all other load holding parts are said to be of high strength steel.

*The ONLY completely automatic electronically controlled battery chargers are made by ...* **FOX**

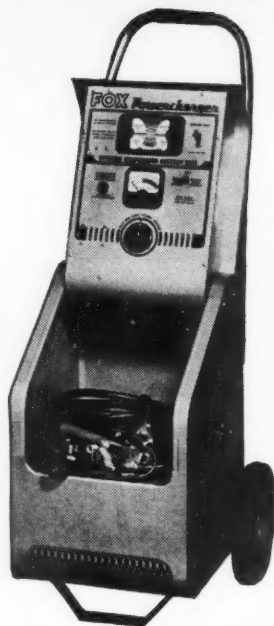
Fox Powerchargers bring a new, fool-proof simplicity to battery charging. Just connect Powercharger to battery, turn current on. That's all! No time clock to set, Powercharger does the rest. Perfect job, automatically, every time.

#### Safety Therment Control . . . a Fox "exclusive"

It detects and constantly reports battery condition to charger. If it is improperly used or accidentally removed, Powercharger cuts off automatically. Safety Therment, exclusive with Fox, has no moving parts, is virtually indestructible.

#### Other features:

Compensated Cut-Off . . . Dynamic Comparator Battery Test . . . Automatic Trouble Light . . . Fast or Slow Charging . . . Full Year's Guarantee.



This model and other Fox Powerchargers are available with conventional electric timer control if desired. Wire or write Dept. G for full details.

# FOX

PRODUCTS COMPANY

PHILADELPHIA 41, PA., U. S. A.

### 454. Radiator Cleaner

The Fram Corporation is marketing its Fram Radiator & Water Cleaner, a device to protect automotive engines against overheating due to faulty cooling systems. The device is said to inhibit rust and corrosion in the cooling system, soften coolant water to stop scale deposits and filters rust, scale and foreign particles from



the coolant. A controlled amount of water flows continuously from the cooling system and enters the cleaner. Water contacts the softening and inhibiting chemicals in a replaceable cartridge and passes through a filtering media where solids are removed. Filtered, softened water containing soluble inhibitor re-enters the cooling system and circulates throughout.

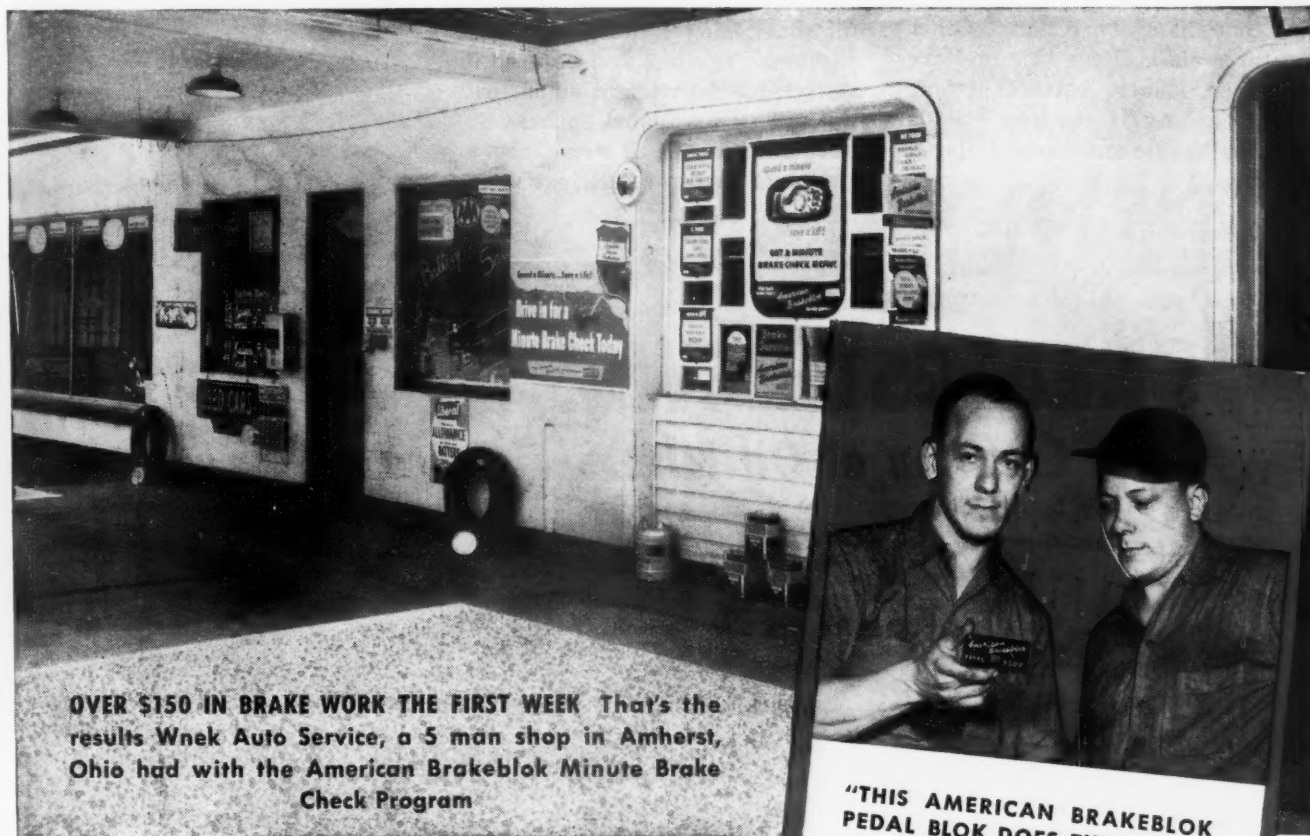
### 455. Hot Spray Booklet

The Sherwin-Williams Company is publishing a new booklet entitled "A Technical Report on Hot Spray Application." The booklet answers such questions as: What are the right materials? How should they be used for best results? What are the advantages of hot spray in automotive refinishing work?

### 456. Ratchet Sets

Challenger Tools Division of the Penens Co. presents the new "Thumb Tip Reverse" ratchet in  
(Continued on page 128)

# WOULD YOU PAY \$3.50 TO MAKE \$75. PROFIT A WEEK?



OVER \$150 IN BRAKE WORK THE FIRST WEEK That's the results Wnek Auto Service, a 5 man shop in Amherst, Ohio had with the American Brakeblok Minute Brake Check Program

## THIS SHOP DID! SO CAN YOU!

Want to increase brake profits in your shop? Want to save lives? Help reduce accidents?

You can! Just like the Wnek brothers shown above.

FIRST. They asked for a free Pedal Blok. It's a slotted wooden blok that fits under the brake pedal, finds faulty brakes, in a minute, *before* pulling a wheel.

We'll send you one, no charge, with our compliments.

SECOND. The Wneks ordered one of our Minute Brake Check Kits. It contains a big, outdoor cloth banner, pen-nants, a 7 pc. display, post cards, folders, complete directions. And costs only \$3.50.

THEN THEY PUT IT TO WORK. They offered a Minute Brake Check to every motorist that drove in. Sold over \$150.00 worth the first week, and it's still going strong. To quote Ted Wnek: "We were amazed. We had no idea we'd get so much work or that customers would co-operate so willingly. That Pedal Blok sure is a money maker."



"THIS AMERICAN BRAKEBLOK PEDAL BLOK DOES THE TRICK," says Ted Wnek, left, shown with his brother Ed. "It intrigues motorists. And we were amazed at how willingly people co-operated. They certainly are safety conscious about their brakes."

Write now, today, for your free Pedal Blok. We'll send it without obligation, plus full details about our Minute Brake Check Kit.

### MAIL THIS COUPON NOW!

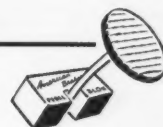
American Brakeblok  
Dept. D  
4612 Merritt Ave.  
Detroit 9, Mich.

Rush me your Pedal Blok, without obligation.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_



AMERICAN BRAKEBLOK DIVISION  
DETROIT 9, MICHIGAN

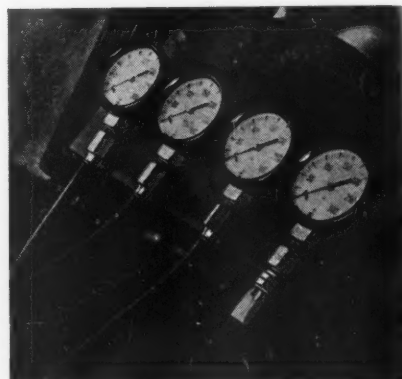
## New Products . . . . . Continued from Page 126

three popular sizes,  $\frac{1}{4}$  inch,  $\frac{3}{8}$  inch and  $\frac{1}{2}$  inch drive. A slight movement of the thumb on the top reverses the ratchet, thus providing one hand operation. Other features claimed for this tool are balanced, smooth ratchet action; space saving ratchet head; knurled handle and chrome plated finish.

### 457. Test Equipment

Kent-Moore Organization announces the J-4872 Powerglide "Diagnosis Test Panel," designed for diagnosing Powerglide transmissions. The tool can be used in the service department or on road tests. This test panel enables the mechanics to check drive range, low range, and reverse, rear pump

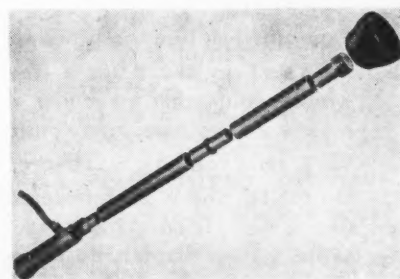
pressures or unusual conditions such as difficult shifting, slippage and chatter, high clutch failures, and other possible conditions. The kit consists of four zero to 300 lb



precision pressure gages, with pressure hoses and fittings to make factory recommended tests on the Powerglide automatic transmissions. The panel is mounted on the floor boards of the automobile, directly above the Powerglide unit.

### 458. Body Jack Tubing

Slip-on Products Company is producing threadless body jack tubing for shops using extension type jacks. According to the firm, the ball-lock principle used on Slip-on tubing simplifies assembly and makes disassembly easier. A mere twist releases the ball. A complete set of Slip-on tubing consists of 66-inches of seamless steel tubing, two male adapters, one



female adapter, four connections and one tubing end. Slip-on tubing is available in two sizes, one at  $1\frac{1}{4}$  inch for 5 to 10 ton jacks and  $\frac{3}{4}$  inch for 2 to 4 ton midget jacks.

### 459. Wiper Blades

Trico Products Corporation is supplying jobbers with an introductory "eye opener" counter display package, designed to empha-

(Continued on page 130)

# GREATEST NEWS!

## Since Creation of Oil Filters!

### ANNOUNCEMENT

Now you can make the same uniformly high profit percentage on every Champ Oil Filter and Refill in the entire line. No shorter discounts on faster movers . . . nor larger mark-ups on less demanded sizes or models. Every one of Champ's Filters & Refills gives you the same full profit percentage over the full line!

**NOW**

**More Money For You with**

# CHAMP'S

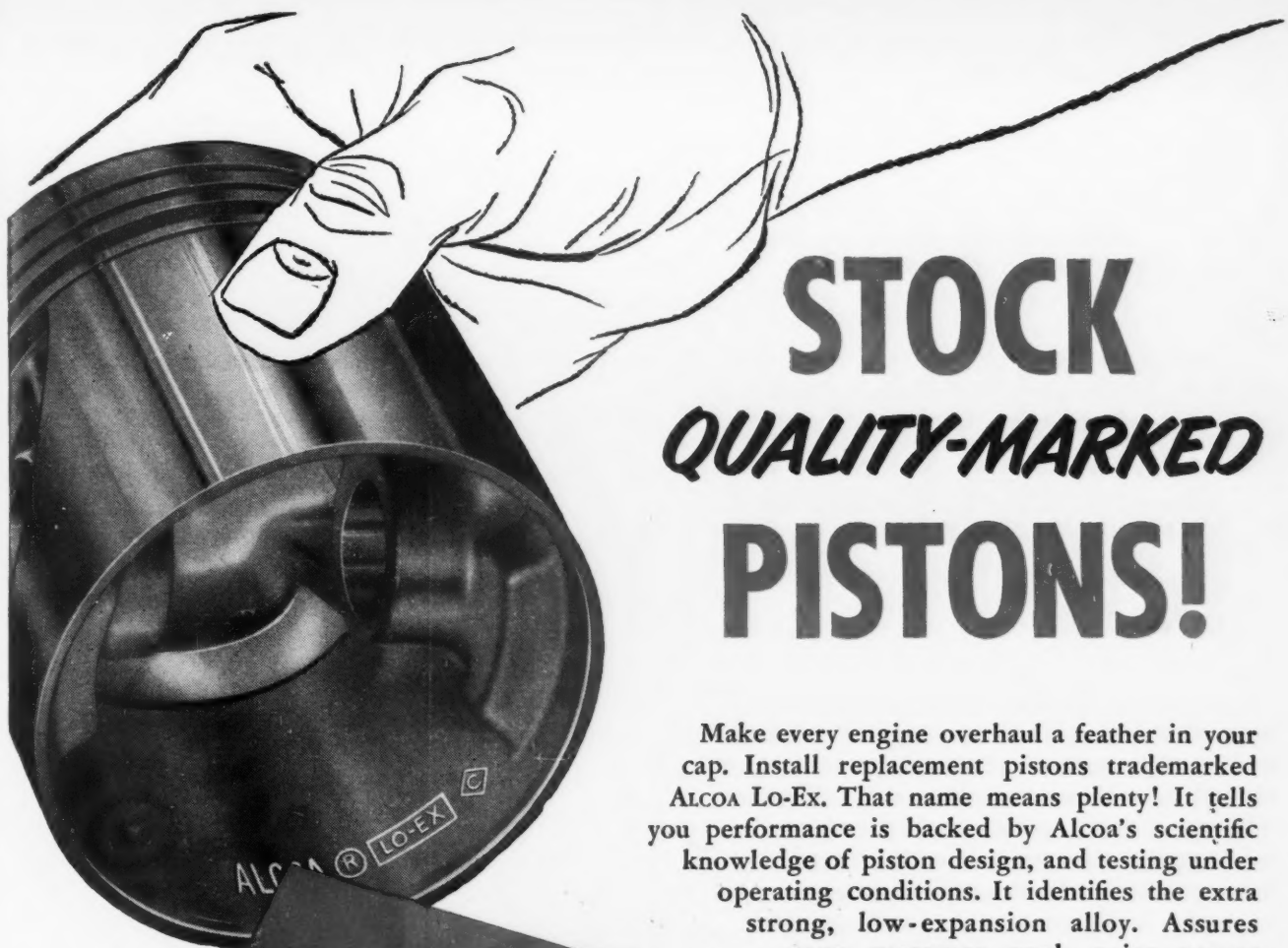
**NEW SALES POLICY for '52**

Enjoy **UNIFORM, HIGH PROFIT** on every Oil Filter & Refill you sell . . . with **CHAMP**, the **FULL PROFIT LINE!** Phone, wire or write for details!

CHAMPION LABORATORIES, INC., MERIDEN, CONN.

**CONTACT YOUR JOBBER TO-DAY**





# STOCK QUALITY-MARKED PISTONS!

Make every engine overhaul a feather in your cap. Install replacement pistons trademarked ALCOA LO-EX. That name means plenty! It tells you performance is backed by Alcoa's scientific knowledge of piston design, and testing under operating conditions. It identifies the extra strong, low-expansion alloy. Assures your customer cool, quiet power that's easy on gas and oil.

Always stock aluminum pistons of ALCOA Lo-Ex alloy—cast by Alcoa, finished by expert piston makers.  
ALUMINUM COMPANY OF AMERICA,  
1850L Gulf Building,  
Pittsburgh 19, Pa.

LOOK FOR  
**ALCOA  
LO-EX®**



when you buy replacement pistons\*

## PISTON CASTINGS OF EVERY TYPE



Trans-Slot



Trunk Type



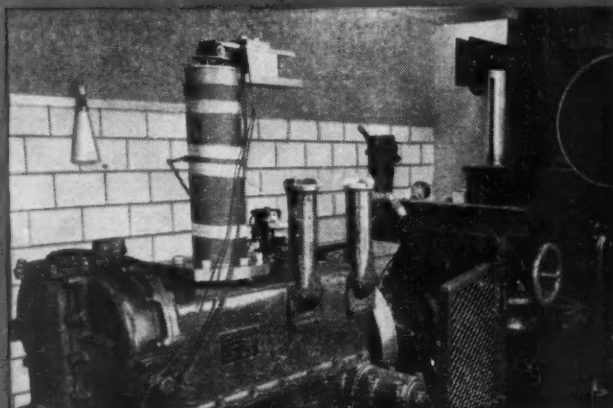
T-Slot



Strut

Alcoa development engineers use this laboratory equipment to measure pistons and ring friction at operating temperatures.

\*Availability may be limited by military needs for aluminum.



## New Products . . . . . Continued from Page 128

size the simplicity of the stocking requirements of a new soft rubber Rainbow and Triple Action Wiper Blades. It contains only two Rainbows in the 11-inch size, fitting every curved windshield and ten Triple Actions in five different sizes. The manufacturer states that virtually any make or model of car can be serviced from it.

### 460. Gasket Book

Felt Products Manufacturing Company is offering a new 16-page gasketing book called "How to Gasket Right to Win Praise Winning Jobs." It contains ideas to save time and come-backs for mechanics, giving step by step procedures to follow when re-gasketing to insure best results

and protection against early gasket failure. The booklet is illustrated and covers such subjects as: head removal and cleaning, preparing bolts and studs, placing gaskets on cylinder blocks, replacing and tightening heads, and hints that save time and money.

### 461. Paint Heater

Spee-Flo Company announces a new hot spray heater which uses the original one-gallon paint can as a heating vessel. Spee-Flo Heater heats one gallon of lacquer or enamel to uniform temperature and viscosity and then



# Always Ready...

WITH  
DEPENDABLE  
**Airco**  
PRODUCTS!

One source of supply for every welding or cutting requirement is provided by the local authorized dealer. He offers a complete line of equipment and supplies — high-purity oxygen, acetylene and other gases . . . calcium carbide . . . gas cutting or welding machines and supplies . . . arc welders, electrodes and accessories. All of it is available promptly, direct from stock, at reasonable cost. Deliveries are made *direct to your door*.

Look for the Airco Authorized Dealer in your Classified Telephone Directory under *Welding Equipment and Supplies* today. He'll be glad to give you complete information about any Airco product, or demonstrate it to you.



## AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY  
AIR REDUCTION PACIFIC COMPANY  
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL  
Divisions of Air Reduction Company, Incorporated  
Offices in Principal Cities



automatically switches off further heat when proper hot-spray temperature has been reached. The firm points out that by using the original container there is no pot to clean. The special pouring spout clamps over the paint can to permit easy dispensing.

### 462. Rubber Lubricant

R. M. Hollingshead Corporation is marketing "Whiz Hush-Shak," available in two standard formulas to suit every rubber lubricating job. The castor oil base product is now known as "No. 1 Hush-Shak," while "No. 2 Hush-Shak" is a new product containing colloidal graphite dispersed in a fast-acting solvent. "No. 2 Hush-Shak" can be used not only for lubricating and preserving rubber but also for quick mounting of tires and tubes. It is said to be non-inflammable, non-poisonous, and harmless to rubber, metal, or car finish.

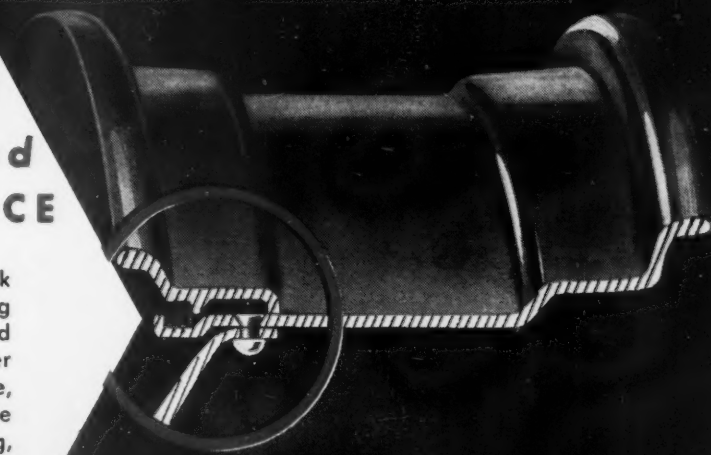
# KELSEY-HAYES

Advanced Design

## 3 pc. Truck Wheel

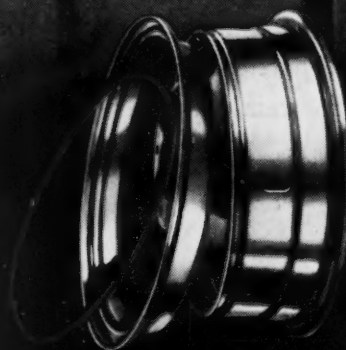
... ARE SAFEST and  
EASIEST TO SERVICE

Kelsey-Hayes 3 piece, wide-base truck wheels have the exclusive **KH** locking device recognized by truck manufacturers and service men everywhere as the safest ever devised! The more the tire exerts pressure, the tighter the retaining ring locks the side flange to the base rim. Yet tire mounting, demounting, and tube servicing is simple!



"HEY GEORGE!  
WHAT IF THAT RIM  
LOCKING-RING  
LET'S LOOSE AT YOU?"

"YOU DON'T HAVE  
TO BE AFRAID OF  
THESE KELSEY-HAYES  
RIMS, BILL! THEY'RE  
THE SAFEST!"



Available in all pop-  
ular sizes for leading  
makes of trucks.



ASSURES PROVEN PRODUCTS AT ...  
KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICHIGAN

PRODUCTS: Wheels—Hub and Drum Assemblies—Brakes—Vacuum Brake Power Units—for Passenger Cars, Trucks, Buses—Electric Brakes for House Trailers and Light Commercial Trailers—Wheels, Hubs, Axles, Parts for Farm Implements.  
PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.





## 1952 Packard . . . . . Continued from Page 43

effected by the introduction of a small vacuum diaphragm.

Adoption of the smaller—9-in.—direct drive clutch for Ultra-matic drive, together with related changes, has brought about a weight reduction of about four pounds. It made necessary a change in the cross-section of the aluminum turbine member, a

change in the clutch housing and changes in the operating piston and pressure plate. Salutory effects stemming from the new clutch include softer action, less drag, and a marked improvement in kick-down operation. Another improvement in clutch design is that the hub floats on the spline, making the plate self-centering.

Planetary design also has been improved by the adoption of a damper. It consists of three equally spaced wedges of sintered metal mounted between the cage and reverse gear and functioning somewhat like overrunning clutch elements. This was done to achieve positive smoothness in the drive line by eliminating back-lash in the mechanism.

The breather has been relocated to eliminate oil drag-out. Further work is under way to improve converter performance and increase torque multiplication by improving the form and finish of converter elements.

Other improvements include: refinements in the governor and governor drive; new neutral safety switch; adoption of a nylon speedometer gear which is molded directly to the shaft. The nylon gear is said to be quieter in operation and longer lasting. Further adoption of nylon gears within the unit will also improve metal conservation through elimination of brass and bronze gearing.

In the interest of copper conservation, Packard will install 20-in. cooling fans which provide better cooling and yet permit use of thinner radiator cores. Radiator core mounting also has been improved.

Detail engine changes include: adoption of a new type timing chain; a vertical type air cleaner on all 327-cu. in. engines; and a higher temperature engine thermostat. The new air cleaner requires a change in carburetor calibration. A 45-amp. generator has also been made standard.

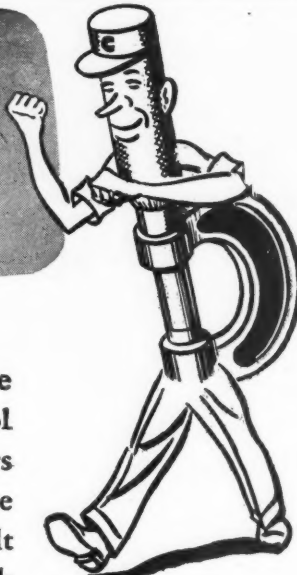
Another improvement is the use of a new clutch driven member and tail shaft mounting on cars specifying overdrive.

### Burdette Becomes Manager Of Ford Parts and Accessories

Donald C. Burdette has been appointed manager of the parts and accessories sales department of the Ford Division of the Ford Motor Company. Mr. Burdette, formerly manager of the fleet sales department, succeeds Henry M. Strout, who resigned recently to become the Ford dealer in Bangor, Maine.

**BUILT** FOR THE JOB

**BEST** FOR THE JOB



In auto repair work, tools built for the job are best for the job. Central Tool Company, maker of fine micrometers for half a century, has developed these automotive micrometers, specially built to help the auto mechanic do better work *faster!* For full particulars, see your jobber or write for catalog.



**No. 400 RM**  
Range Micrometer, Range 0" — 4", ideal for any auto repair shop.



**No. 510 MBM**  
Main Journal Micrometer, Range 0" — 5", measures journal without removing crankshaft from engine.



**No. 350RL** Connecting Rod Micrometer, Range 1½" — 2½", for most crankshaft sizes.



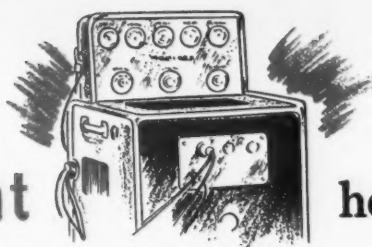
**CENTRAL READ-RITE**  
Micrometers, shows measurement at a glance.

**THE CENTRAL TOOL COMPANY**  
462 WELLINGTON AVE., CRANSTON 10, R. I.

LARGEST SELLING MICROMETERS  
THROUGHOUT THE AUTOMOTIVE WORLD



Modern equipment



helps you shoulder

the responsibility of keeping America's cars



and

trucks



rolling during this critical defense period.

You can get the equipment

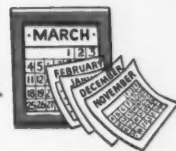


you need to do the big

profit



jobs NOW and pay for it LATER



with Commercial Credit's **A**utomotive **E**quipment **P**lan.

All you need is a small



down payment.

We pay the balance, and you repay us in easy

monthly instalments.



Select your equipment today . . .

and buy it the easy way!

**BUY IT ON TIME !**

**ASK YOUR  
JOBBER ABOUT**

**AEP**  
AUTOMOTIVE EQUIPMENT PLAN

ONE CONTRACT • ONE COST • INSURANCE INCLUDED

*The best equipped shop  
gets the profitable business!*

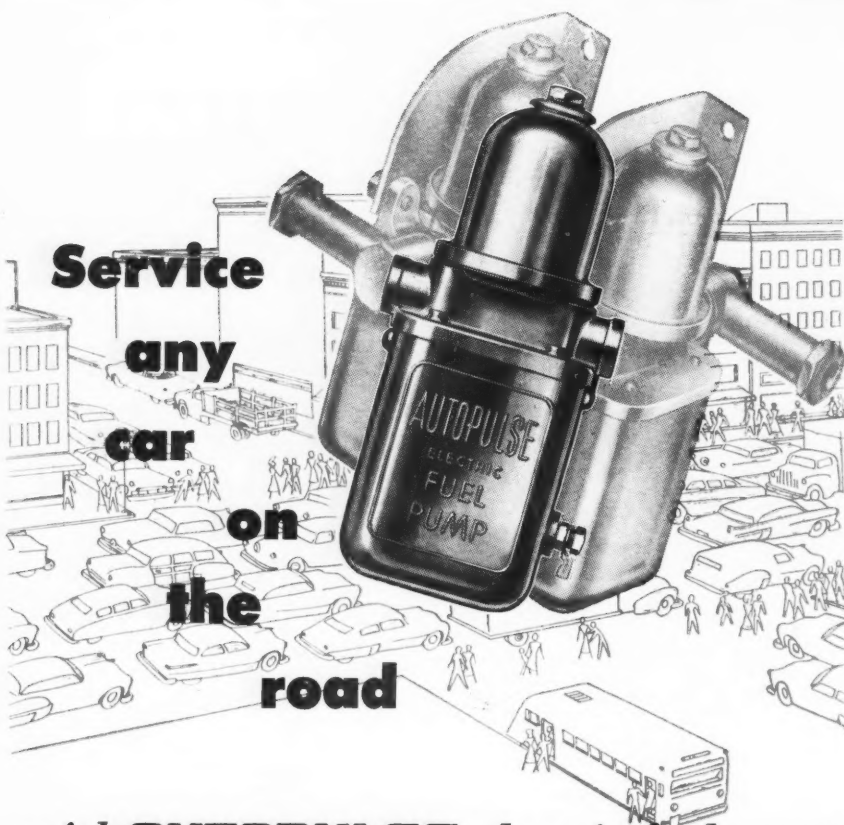
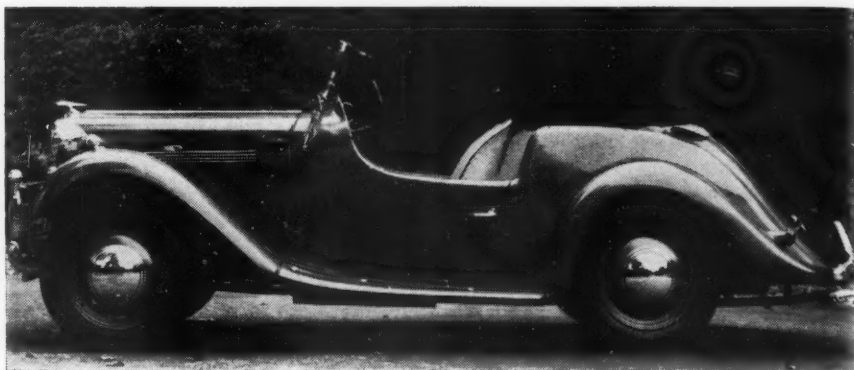
**COMMERCIAL CREDIT  
CORPORATION**

A subsidiary of Commercial Credit Company, Baltimore  
...Capital and Surplus over \$100,000,000...offices  
in principal cities of the United States and Canada.

### British Singer Sports Car With Left Hand Drive

The British-made Singer SM 1500 Sports Convertible is now available with a left hand drive.

Performance of this car recently was demonstrated on the track at Bridgehampton, Long Island, where it attained a top speed of 102 miles per hour and a positive corner-holding speed of 80-82 miles per hour. This 50



*with* **AUTOPULSE** *electric fuel pump*

When a driver calls for it, you want to be able to supply the right fuel pump. You do not want to be forced to send the sale over to a competitor. You can take care of all fuel pump replacements with one single Autopulse model. With the Autopulse Counter Display Kit you can fit all cars, for it contains:

- 1 Pump to fit Ford-built cars.
- 1 Pump to fit Chrysler-built cars.
- 1 Pump to fit all others.

No need to tie up a lot of money for inventory of all the thousand different models of fuel pumps—just stock Autopulse and the Cam pump models which are most in demand, and you are ready to fit any car that drives up to your shop. You will be surprised how you can increase your fuel pump business, if you are prepared for it. Write for details of the "low inventory" Autopulse stock plan. Autopulse is fully guaranteed and has a liberal trade-in allowance for repairs or replacements.

**AUTOPULSE**  
*the heart of your motor*

**corporation**  
218 e. dowland street  
ludington, michigan, u. s. a

horsepower model, which is the sports version of the more expensive SM 1500 of one year ago, is claimed to have more horsepower per pound than any other competing car in its class.

The Singer Sports Convertible has an all aluminum, custom built, lightweight body. The greater part of its 1848 lbs. is in its motor, chassis, shaft and rear axle. This weight distribution, coupled with a ground clearance of only six-and-one-half inches, is designed to give the SM 1500 more road holding ability than many larger automobiles. Under normal driving conditions, it is said to corner safely at upwards of 70 miles per hour, achieve a top speed of 90-95 miles per hour and a cruising speed of 60-65 miles per hour.

The gear box has four speeds forward.

The Singer Sports Convertible, which lists for \$1,795 F.O.B., New York City, yields up to 35 miles per gallon. It has an overhead camshaft engine.





**HOT SPRAY****or COLD...****LACQUER****or SYNTHETIC...****ADVANTAGES POSSIBLE WITH HOT SPRAY**

**CUTS COSTS**—less solvents used—less solvents wasted.

**SAVES TIME**—50% fewer coats needed.

**GIVES MORE UNIFORM RESULTS**—reduces variations in results caused by climatic conditions.

**PROVIDES IMPROVED FINISH**—gives smoother flow... tougher film... more natural gloss... greater depth of color.

**REDUCES COMMON PROBLEMS**—lessens possibilities of blushing, orange peel or over-spray... reduces amount of dirt in final finish.

**Get this book**

This book summarizes the advantages of, and latest developments in hot spray methods, materials and equipment. It includes suggestions on temperatures, pressures, reductions and application techniques, based on laboratory findings and

shop experience. Write for copy, without obligation.

**You can be sure...****either way...****if the materials are OK**

What are the right materials... how should they be used... for best results with hot spray application?

You will find the right answers, for hot spray finishing as well as cold, with either lacquer or enamel, in Sherwin-Williams OK Automotive Finishes. Sherwin-Williams Opex Lacquers and Kem Transport Enamels enable any shop to obtain the fullest benefits offered by modern methods of hot spray application.

For up-to-the-minute technical information on hot spray finishing and the advantages it offers in automotive refinishing work, write today for a free copy of the new Sherwin-Williams booklet, "A Technical Report on Hot Spray Application". If you would be interested in attending a clinic or participating in an actual demonstration of hot spray application, consult your nearest automotive jobber handling Sherwin-Williams OK Automotive Finishes or write us, and every effort will be made to arrange one in your locality. Call, write or phone—today! The Sherwin-Williams Co., Automotive Sales Division, 1220 Midland Bldg., Cleveland 1, Ohio. (Export Sales Division, Newark 1, N. J.)



**SHERWIN-WILLIAMS**  
**AUTOMOTIVE FINISHES**

# Complete Replacements

for ALL Vacuum Windshield Wiper Motors\*

WITH ONLY

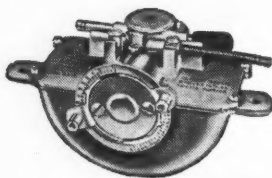
## 6 ANCO® Models



- \* **REPLACE ALL**
- CABLE LINKAGE MOTORS
  - BAR LINKAGE MOTORS
  - DIRECT DRIVE MOTORS

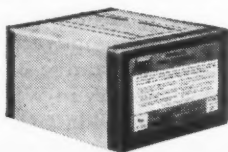
### MAXIMUM SERVICE with MINIMUM INVENTORY

Now only six models Anco Windshield Wiper Motors replace all original equipment vacuum motors on all vehicles 1935 and later models—(except only a few very rare and long obsolete vehicles).



#### OPEN STOCK

All ANCO Motors—as well as ANCO Blade and Arm products—may be ordered . . . in any quantity needed . . . from open stock.



#### COVERS-ALL MOTOR SERVICE SET-UP

This factory-sealed carton starts dealer with everything required for full-range service.



#### MOTOR SERVICE CABINET

This all-metal cabinet contains an "organized" stock of everything required for dealer's full-range service. Cabinet may be used separately or combined with ANCO All-Car Service Windshield Wiper Blade and Arm Cabinet making a complete windshield wiper service department.



#### BONDED

... to please owner as long as he keeps the car on which installed . . . Lots more power . . . Lots less stall . . . Adjustable blade travel setting compensates for linkage wear and prevents blade slapping against edge of windshield.

## THE ANDERSON COMPANY

GARY, INDIANA

Makers of Accepted Automotive Products Since 1918

ANCO PATENTED  
SAFETY PRODUCTS

PATENTS MAKE JOBS

QUALITY FACTORY

WHICH

MADE (LAW)

POWERFUL CONSUMER ADS  
IN "POST" AND "COLLIER'S"!



STRIKING DISPLAYS  
AND POSTERS!



HELPFUL CATALOGS  
AND SALES MATERIALS!



## Grizzly Brings You The Liveliest Promotion in the Brake Lining Business!

Don't take *our* word for it! Compare promotions in the brake lining business and see if you don't agree that Grizzly's is the liveliest . . . the most consistent . . . and the most helpful to you! Grizzly's dramatic consumer advertising and display materials stress the *visual* appeal—so vitally important in today's stiff competition for readers' attention. And Grizzly catalogs and other sales helps are carefully planned to bring you *all* the selling information you need, presented in a clear, simple manner. Yes, Grizzly is doing everything possible to make it easier for car owners to *buy* and for you to *sell* the finest brake products made! Grizzly Manufacturing Company, Paulding, Ohio.



Bear in Mind



ask for

**GRIZZLY**  
BRAKE LINING



### "SYNCO-SETS"

For riveting. Famous for nearly 40 years for smooth, soft-pedal, safe stops. Drilled and countersunk to manufacturers' specifications. Individually boxed.

### PRECISION BUILT BRAKE BLOCKS

Finished to close tolerances in every dimension, controlled throughout manufacture to assure uniform performance characteristics.

## THE BEST YOU CAN SELL!



### BRAKE FLUID

Meets or excels all S.A.E. standards. Chemically stable. Anti-foam. Moderate duty type for range of 300° to -80°. Heavy duty type, 325° to -60°.

### "SAFTIBOND" LINING

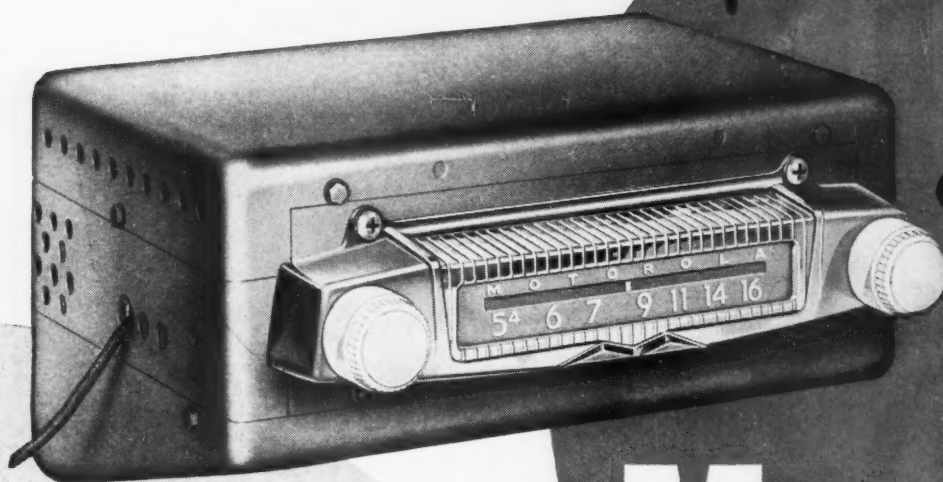
The original lining with factory applied-bonding agent, which saves time, produces cleaner, better results, at less cost.



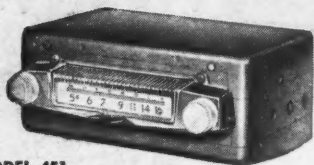


**Most important  
accessory**

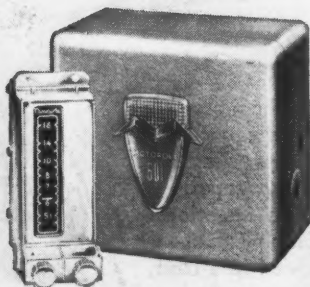
*you can install  
in your  
customer's  
car*



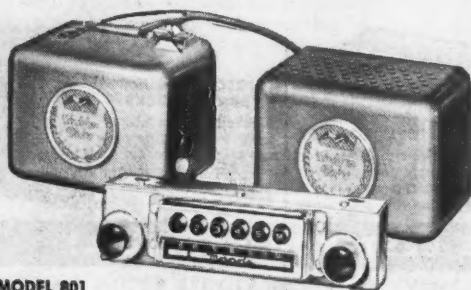
MODEL 401



MODEL 451



MODEL 601



MODEL 801

# Motorola Auto Radios

**known  
and trusted for  
most dependable performance!**

- For 23 years, Motorola has been the favorite auto radio of millions of motorists the world over!
- More people use, more people prefer Motorola because of its famous record of *dependable performance*.
- More auto radio dealers feature and display Motorola because it's the name their customers *know* and *trust* ... the name that *sells*!
- Each of Motorola's power-packed models gives super long-range reception that pulls in distant stations without fading or distortion. Full, rich high fidelity tone that rivals home set quality. Patented motor noise filter; automatic volume control. And every Motorola is amazingly easy to install or transfer! There's a model to fit and match most makes of cars and trucks. Remember, when you install an auto radio in your customer's car, suggest the one most people *know* and *want* ... a famous Motorola!

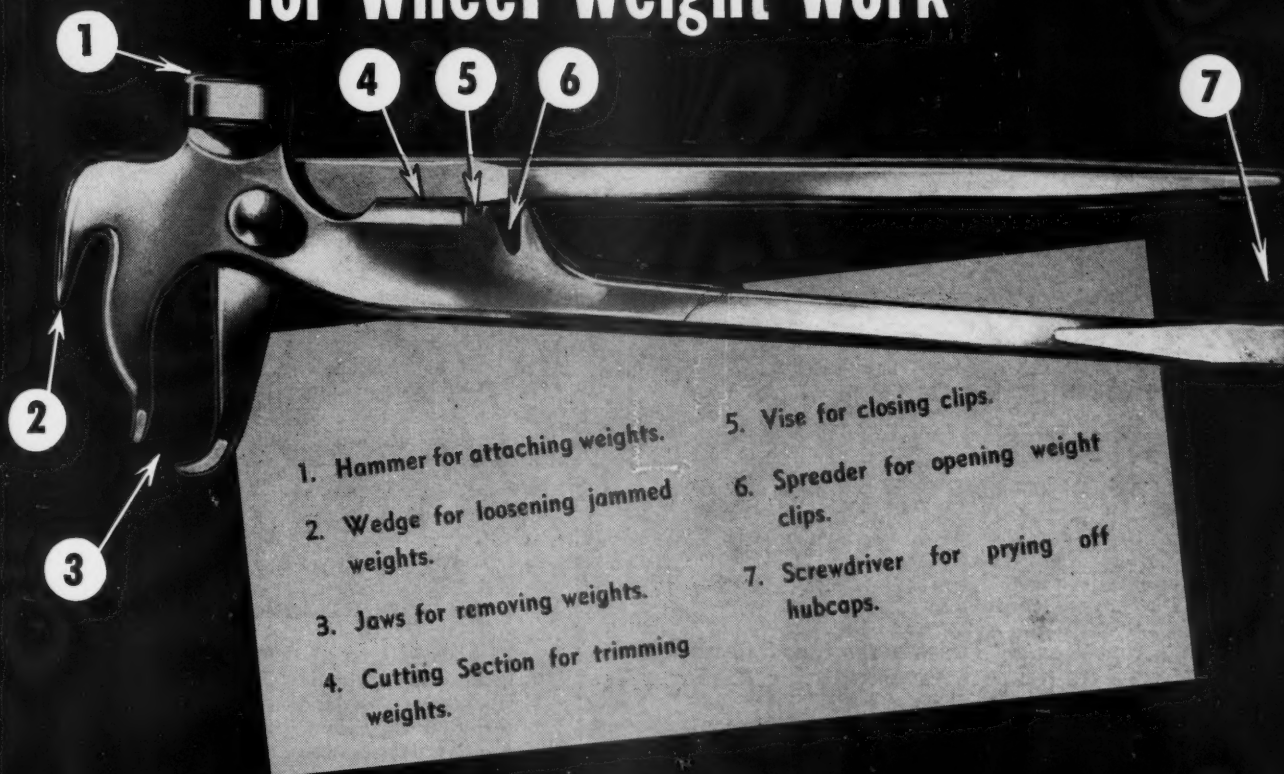
**CONTACT YOUR DISTRIBUTOR TODAY!**

**Motorola Inc.**

4545 AUGUSTA BLVD., CHICAGO 51, ILL.

THE WORLD'S LARGEST INDEPENDENT MANUFACTURER OF AUTO RADIOS

# You Need Only **ONE TOOL** for wheel weight work



*John*  
**BEAN**

## P.D.Q. Wheel Weight Tool

Save time and labor on every balancing job with the John Bean P.D.Q. — the wheel weight tool (pat. app. for) that does seven different jobs. A rugged alloy steel forging, the tool is plated for long service. Your balancing will go faster, too, with an adequate stock of John Bean Weights. Available in four improved styles, with a complete range of sizes. For added speed and profit in your aligning department, stock John Bean caster shims. See your jobber today.

**JOHN BEAN DIVISION**  
FOOD MACHINERY AND CHEMICAL CORPORATION  
LANSING 4, MICHIGAN

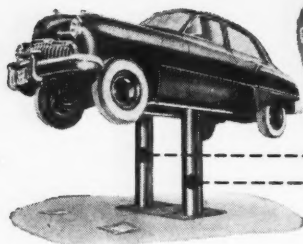


WHEEL ALIGNERS AND CORRECTION TOOLS  
WEIGHTS • STEAM CLEANERS •

• WHEEL BALANCERS AND BALANCING TOOLS  
CAR WASHERS • HEADLIGHT TESTERS

# GLOBE Frame-Kontakt\* HOIST

provides greater accessibility  
in servicing automobiles



\*Trade Mark U.S. and  
Foreign Patents Pending

A Globe *Frame-Kontakt* Hoist gives mechanics more "elbow room" under the car... makes parts more accessible for repair, servicing, or replacement... lets wheels hang free... provides a completely smooth floor to facilitate movement of portable equipment. What's more, the car is positioned merely by driving into the front wheel-wells.

All this adds up to faster, easier, and better servicing of passenger cars—more profit per job—with a Globe *Frame-Kontakt* Hoist!

For the complete story on Globe Hoists see your Globe jobber or write for your free copy of Globe's new Shop Planning Guide MA-308.

GLOBE HOIST COMPANY 1000 E. Mermaid Lane  
Philadelphia 18, Pa.  
(Factories at Des Moines, Iowa and Philadelphia, Pa.)

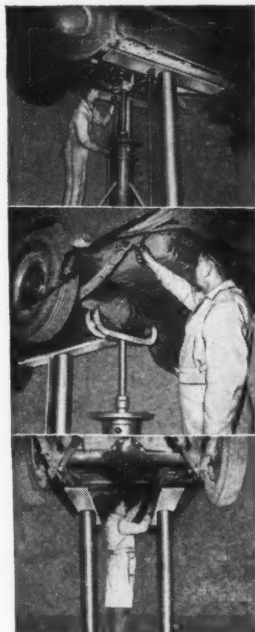


## A few examples of how a Globe *Frame-Kontakt* Hoist speeds undercar work

Removal and replacement of an automatic transmission is done easily on the *Frame-Kontakt* Hoist with the aid of a Globe type TD-140 Transmission Dolly. Time saving: 35%.

Rear spring shackles are removed and replaced using portable dolly and axle fixture. Time saving: 36%.

Muffler and tail pipe removed and replaced. Ample room for mechanics to get at fittings. Time saving: 47%.



The World's Most Complete and Versatile Line of Lifting Equipment





# NEW FEATURES!

## COLOR-CODED WIRES

— for instant,  
fool-proof  
identification

## SNAP-IN TIPS

— for quick  
connection of  
wire terminals

### **GUARANTEED ALL-WAYS FOR THE LIFE OF THE CAR:**

- **Guaranteed positive self-cancellation every time**
- **Guaranteed not to slip**
- **Guaranteed not to require readjustment**
- **Guaranteed burn-out proof**
- **Guaranteed no wheel drag**

— for the life of the car

NOW — the most beautiful, most dependable turn signal on the market is also the easiest to install! With the new snap-in tips and color-coded wires, installation time is greatly reduced. Order the new and improved Yankee conversion kits and switches today. Send for catalog. Yankee Metal Products Corp., Norwalk, Connecticut.

### **YANKEE MILEAGE-MINDED ACCESSORIES**

\*SWITCH—Pat. Pend.

# YANKEE

STATE APPROVED

## **directional TURN SIGNAL CONVERSION KIT**

with the positive  
**SELF-CANCELLING  
SWITCH**



# The Mysterious Case of the

# STRANGER *in the* PAINT SHOP

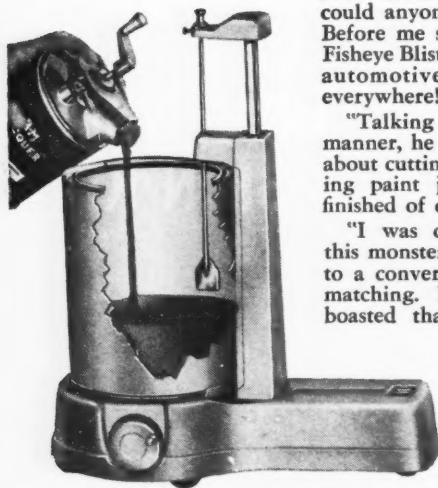


## How the TINTOMETER foiled a sly villain!

This is George Smiley's own story. This is how it happened.

"I had just finished spotting a fender when the door to my paint shop slowly opened. I had a strange feeling of uneasiness as a clammy hand settled on my shoulders, and I quickly turned, gripping my spray gun like a pistol. Naturally I smiled as I did so; this could have been a customer.

"But here was an evil-looking stranger! Instantly I recalled that I had seen his profile on our Post Office bulletin board . . . *Wanted! . . . Reward!* How could anyone forget that face? Before me stood the notorious Fisheye Blisterbottom, enemy of automotive refinishing men everywhere!



"Talking in his usual sly manner, he fed me his old line about cutting corners and shoving paint jobs through. Half finished of course.

"I was determined to trap this monster, and I led him into a conversation on car color matching. He bit hard, and boasted that he could match

The R-M Tintometer makes it possible to prepare car colors in a matter of minutes... accurate to the one-thousandths part of measurement!

any car color by eye in five minutes! When I forced him to prove it, he was off a mile.

"I told him I didn't believe in guesswork, and when I showed him my new R-M Tintometer color matching system, old Blisterbottom's face turned a kind of salmon color. He knew he was licked and crawled away into the winter twilight!"

Just like the scientific police systems used for matching the fingerprints of crooks like Fisheye, the R-M Tintometer is an easily operated scientific system for matching car colors that are hard to capture! Used by Refinishers and Paint Jobbers throughout the country. Ask your Jobber now. Write for the helpful R-M Refinishers' Manual.

Ask your Jobber to show you the latest R-M Refinishers' slide film, "Pat, the Pixie Painter."



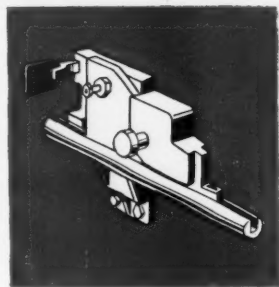
5935 MILFORD AVE., DETROIT 10, MICH.

1244 N. LEMON ST., ANAHEIM, CALIF.

Manufacturers of passenger and commercial car lacquers • enamels • primers • surfacers • tinting colors • thinners • removers • rubbing compounds, etc.

**SUNNEN** Owners:

Get the Most  
Out of Available  
Manpower by Using  
the Pin Fitting Gage



**You Can Fit Pins Twice As Fast**

with the Sunnen Pin Fitting Gage as without it. It's the handiest gage ever made for this work. It checks the amount of stock removal, shows you how much stock must be taken out and measures clearances quickly and accurately.

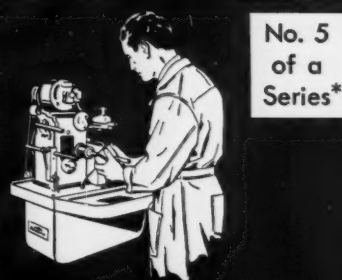
Using this gage eliminates time-wasting "cut and try" methods. You spend your time honing instead of checking the size . . . and when the job is done, you have a measured oil clearance.

In addition, the Sunnen Pin Fitting Gage helps prevent going oversize — saves scrapping of bushings. The gage is easy to set, easy to use. No micrometers or other gages are needed.

Get the complete story on the benefits of using this gage in Sunnen's new booklet, "Sunnen Service Hints."

**Sunnen Products:**

Bushing Grinders • Cylinder Grinders • Crankshaft Grinders •  
Bearing Sizers • Rod Aligners • Service Tools



Helpful  
HINTS on  
HONING

\*This series of advertisements is designed to help users of Sunnen equipment conserve materials and manpower.


Get your  
free copy from  
your Sunnen  
Jobber or  
write direct.



**SUNNEN PRODUCTS COMPANY**

7918 Manchester Ave., St. Louis 17, Missouri • Canadian Factory: Chatham, Ontario





I'll bet you this time  
your mom buys a Fiberglas  
**DOUBLE-INSULATED** battery!

**Right, Mr. Dealer...  
if you're ready to sell it**

If you're displaying batteries that are double-insulated with Fiberglas\* Battery Retainer Mats . . . if you're prepared with the story of their longer life . . . then it's easy to sell these top-profit batteries. And it's easier than ever today because people are glad to pay a little extra to get longer battery life. Be sure you cash in . . . with Fiberglas double-insulated batteries. Owens-Corning Fiberglas Corporation, Department 50-K, Toledo 1, Ohio.

\*FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for products made of or with glass fibers.

**IS IN YOUR LIFE...FOR GOOD**



This full color ad appears in December 1 SATURDAY EVENING POST and January HOLIDAY, out December 12.

A Christmas Gift...  
**Howard Zink**  
AUTO SEAT COVERS

GRAND CHRISTMAS IDEA:  
**Howard Zink**  
AUTO SEAT COVERS

This full color ad appears in November 17 SATURDAY EVENING POST and December HOLIDAY, out November 14.

6 shaped pleats, 4 knobs, stripes in wonderful pleats and pleats. Its wonderful fabrics superbly tailored by Howard Zink.

You know the warm glow you get when you give an important someone a gift that is really special - a gift so thoughtful, confidently perfect the welcome it will receive?

That warm glow will certainly be yours this Christmas when you give Howard Zink auto seat covers. For here in one glorious package that have made Howard Zink far and away the dealer has a Howard Zink gift certificate which is your personal choice of pattern and color.

If our dealers, auto accessory stores, sport specialty shops, and department stores, is where. It's the gift for the owner of your nearest dealer.

Here's a wonderful way to surprise and delight someone this Christmas. Take a set of beautiful Howard Zink auto seat covers, in exactly the right size, model and color for that certain someone's car.

It's easy. Just use the Howard Zink Gift Certificate which your dealer has. The lucky recipient does the only thing - He looks at those smooth-ribbed, smooth Howard Zink pleated, plastic-coated fabrics. Look the plain cotton-nylon stripes, checks, stripes and plain fabrics. Look the handsome pleats, stripes and color of it. Yes, here's a stand-by idea for your gift and recipient alike.

If our dealers, auto accessory stores, sport specialty shops, and department stores, is where. It's the gift for the owner of your nearest dealer.

## HERE'S HOW WE'RE HELPING YOU BUILD CHRISTMAS SALES OF

as advertised in...



**Howard Zink**  
SEAT COVERS

Attention Howard Zink dealers! Help yourself to all these Christmas sales helps! Order a good supply of Gift Certificates—they're free! Order a good supply of Howard Zink Christmas wraps for boxes—they're inexpensive and will pep up your displays! That's the way to cash in on the sure-fire Christmas demand for the best known, best liked seat covers in the world.

P. S. If you're not carrying Howard Zink seat covers, now's the time to start. Write and our representative will call and explain our entire Christmas program.



**Howard Zink**

THE HOWARD ZINK CORPORATION  
FREMONT, OHIO

Passaic, N.J. • Long Beach, Calif. • Charleston, Miss.

*World's largest manufacturer of auto seat covers*

This Gift Certificate is available to all Howard Zink dealers. Get your supply now!

# THE UNITED MOTORS MARKET IS MEASURED BY MILLIONS OF OWNER-PROVED UNITS

## NAMES KNOWN EVERYWHERE

DELCO Batteries  
AC Gauges, Speedometers  
and Rebuilt Fuel Pumps  
SAGINAW Jacks  
MORAINE Engine Bearings  
DELCO Radio Parts  
ROCHESTER Cigar Lighters  
HYATT Roller Bearings  
INLITE Brake Lining  
HARRISON Heaters  
GUIDE Lamps  
DELCO Clocks  
NEW DEPARTURE  
Ball Bearings  
DELCO Shock Absorbers  
MORAINE Gasoline Filters  
HARRISON Thermostats  
DELCO-REMY Starting,  
Lighting and Ignition  
KLAXON Horns  
HARRISON Radiators  
ROCHESTER Carburetors  
DELCO Hydraulic Brakes

## ORIGINAL EQUIPMENT ON OVER 50% OF TODAY'S VEHICLES

Yes, more than half the cars, trucks and buses on the road today use United Motors lines as original equipment. And that means an enormous pre-sold market for you.

## YEAR-ROUND SALES

United Motors lines—leaders in their field—assure United Motors dealers of an almost unlimited market . . . of year-round sales, and a strong and always-growing business.

## TOP-FLIGHT DISTRIBUTORS

You'll enjoy doing business with United Motors distributors. The United Motors distributor and his staff are men of importance in your area. They have had wide and valuable experience in the automotive business. Call your United Motors distributor soon . . . find out what he can do for you. You'll find his friendly counsel invaluable.

## UNITED MOTORS SERVICE

Division of General Motors Corporation • General Motors Building, Detroit 2, Michigan





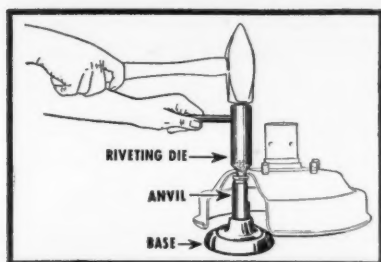


## Good compressor for BIG trucks

**K-D 325**... for the **BIG** truck, bus, tractor engines. One man can operate this rugged, deep throated Compressor on most engines (L-head or valve-in-head) with manifolds on. 3 pairs jaws. Wide jaw selection, plus plunger bar adjusting feature makes 325 flexible enough to service valves of any length, in any position.

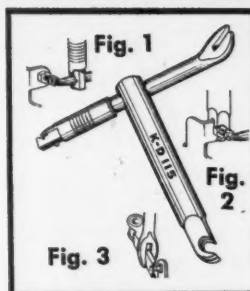


## Riveting Die Sets



For removing and installing wheel studs. Designed for shops with an average amount of wheel work. Sets consist of Base, Anvil, Riveting Die. Dies & Anvil tempered, Rockwell tested. No. **S565 Set** for Chevrolet & Pontiac,  $7/16''$  stud. No. **S567 Set** for Chevrolet Truck,  $9/16''$  stud. No. **S570 Set** for Ford-built cars,  $1/2''$  stud. No. **S575 Set** for Ford AA & BB Truck.  $3/4''$  stud.

## UNIVERSAL point aligner



**K-D 115 Universal Ignition Point Aligning Tool**... for aligning contact points right in the distributor. Carefully forged and machined to handle all types of points in all types of distributors, including Ford. **Fig. 1:** use on ribbed breaker arm. **Fig. 2:** adjusting a channel type arm. **Fig. 3:** adjusting stationary point.

## Keeper inserters - ALL motors

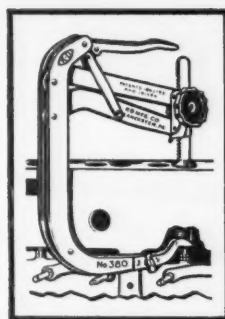


**K-D 608**... specially designed to replace the one size split keeper now used on most all present motors (including Ford & Chrysler motors). Light, easy loading, self supporting.

**K-D 605:** for handling keepers of larger size than serviced with No. 608. Easy loading, fast, self supporting.

**K-D 609:** specially designed to handle split collar type keepers used on late Ford trucks (6 cyl. 110 hp., 8 cyl. 150 hp.). Magnetic jaws.  $4\frac{1}{2}''$  long.

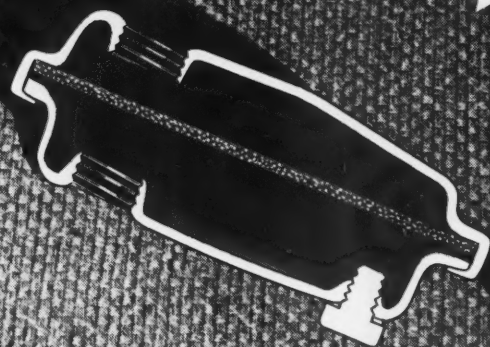
## L-heads & Valve-in-heads



**K-D 380 Compressor**... services more than 85% of L-heads and valve-in-head engines on the road today. Most universal compressor on the market. Safe and fast for one-man operation. Rigid bar steel construction, strongly braced and riveted. Adjustable jaws and plunger bar. 2 pairs jaws furnished. Rustproof finish.

**K-D Tools ★ Lancaster, Pa.**

**START SELLING  
THE FILTER  
THAT  
STOPS STALLING!**



## MORaine ALL-METAL GASOLINE FILTER

Want some mighty pleased customers and extra dollars in your pocket? Sell Moraine gasoline filters! All-metal except for a sealed-in gasket, Moraine filters remove dirt, water, lint and scale . . . stop carburetor clogging . . . stop stalling. Not only that, Moraine filters are unbreakable, easy to install and easy to service. Order a supply from your United Motors distributor today.



**A UNITED MOTORS LINE**  
Available Everywhere Through  
**UNITED MOTORS DISTRIBUTORS**

## MORaine PRODUCTS

**DIVISION OF GENERAL MOTORS  
CORPORATION, DAYTON, OHIO**



### MORaine ENGINE BEARINGS

For satisfied customers, sell Moraine engine bearings. They're quality made . . . durable . . . and they're original equipment on G.M. cars and trucks; plus most other popular makes. Available through United Motors distributors.



### DELCO BRAKE FLUID

Sell the brake fluid that exceeds S.A.E. standards for quality and safety—Delco! Order Delco Super 11 heavy-duty and Super 9 Universal brake fluids from United Motors Distributors. Super 9 now available in new handy 8 oz. bottles.

# PROVED!

## Ads in Country Gentleman Help You Sell More Goods!



For frequent shopping and pleasure trips the Andersons, California Country Gentleman family, have 2 cars; for farming, 2 tractors and a truck. Besides farming, Mr. Anderson also travels 30,000 miles a year as manager of an irrigation cooperative.

When a manufacturer puts an ad in Country Gentleman, it's the strongest kind of help to you in selling your best rural customers! This has been proved in a nationwide survey of men and women heads of Country Gentleman homes. Not only do they read Country Gentleman more, use it more, like it more than the other big farm magazines—but they also . . .

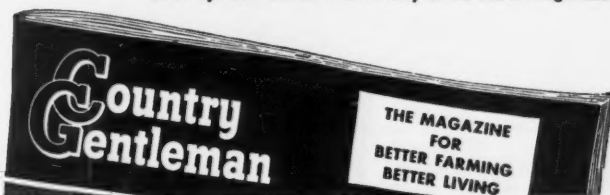
- 1** READ THE ADVERTISING in Country Gentleman . . . in 96.2% of homes.
- 2** GET BUYING IDEAS from the advertising in 3 out of 4 homes.
- 3** RECALL DEFINITE BUYING IDEAS in over 3 out of 4 of these homes.

... that's why dealers like you give  
Country Gentleman a lead of nearly 2 to 1  
when voting for the farm magazine that helps most to sell local customers

That's why Country Gentleman also rates first with advertisers. They invest more advertising dollars in Country Gentleman than in any other farm magazine.

### GREATER POWER

TO MOVE PEOPLE  
TO MOVE GOODS





# You haven't SEEN used cars sell on sight...



until you've  
made them  
"inside clean"  
with  
**FAB-SPRAY**

**Dealers report: \$50 to \$100 MORE per  
used car is easy to get after simple spray job  
with Fab-Spray costing only  
"a couple of bucks"!**

*Why Fab-Spray can give you unique  
and beautiful effects:* Not a tint,  
paint or dye, Fab-Spray actually  
"bathes" fabrics in a deeply pen-  
etrating mist. From this mist original  
fabric patterns and color tones  
emerge with fresh beauty. Fab-Spray  
builds upon the natural fabric tex-  
ture—does not blot it out. You can  
easily test-spray a small patch with  
Fab-Spray and preview the finished  
results. No other redecorating  
product works like Fab-Spray to  
recreate fabric charm.



**Contact your local Automotive Jobber**

or Fab-Spray factory direct for immediate shipment  
or additional information. **HENDERIZE, INC.,**  
5667 Freepoint Blvd., Sacramento, California

- Fab-Spray **BEAUTIFIES** fabrics without altering texture
- Fab-Spray **COLORS** without leaving "painty" hard surface
- Fab-Spray **PENETRATES** fabric surface; does not clog pores
- Fab-Spray **RESTORES** springy "like new" feel to nap
- Fab-Spray **COVERS** dirt stains, fade streaks, water blemishes, oil and grease spots
- Fab-Spray **HELPS PROTECT** against wear, fading, water, sun

## YOUR EASY PROFIT WAY WITH FAB-SPRAY

- One quart (\$2.25 cost to dealer)  
sprays entire sedan interior
- "Once-over" spraying re-glam-  
orizes headlinings, upholstery, door  
panels, kick pads, carpets, seat  
cushions, rubber mats
- Working time (for entire interior)  
averages one hour per car
- No surface preparation needed  
except removal of loose dirt
- No masking needed; simply wipe  
overspray from metal and glass
- No expert labor needed; anyone  
can use Fab-Spray
- Surfaces dry quickly—in few  
hours, depending on humidity
- Any desired shade can be mixed  
from assortment of Fab-Spray colors
- Fab-Spray is also available in  
white, black, clear, aluminum

**Don't look now but . . .**



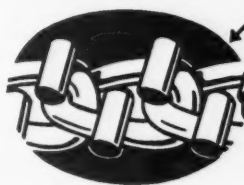
*He's on the track  
to more  
TIRE CHAIN SALES  
with **McKAY**  
MULTI-GRIPS*

## **McKAY Multi-Grip Tire Chains**

Give **"TWICE THE ROAD BITE"**  
of any other Tire Chain

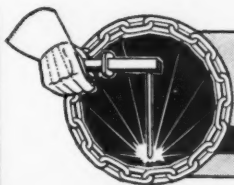
*Here's why*

- ① 312 Gripping Points Dig Into Ice & Snow
- ② 156 Links Have 2 Case-hardened Cross Bars Each for More Wear
- ③ More Surface Contact for More Road Grip



### **OTHER McKAY PRODUCTS**

- McKay Metal-Fil
- McKay-Rod Electrodes
- Mild and Stainless Welding Electrodes
- Industrial and Commercial Chain



**THE McKAY COMPANY**  
PITTSBURGH, PA.

WELDING ELECTRODES    COMMERCIAL CHAINS    TIRE CHAINS

462 McKAY BUILDING    PITTSBURGH 22, PA.

See your jobber  
for  
**McKay Chains**  
Now!



*It will pay you to have a...*

# FREE DEMONSTRATION

*of easy-to-use*  
**RIGHT IN  
YOUR OWN SHOP!**

**ALLEN EQUIPMENT**

Let us show you how you can make more money with the new Allen "packaged" department plan . . . how our field staff is qualified to help you develop more business! Let us prove to you how simple the new Allen equipment is to use . . . how accurate, versatile and dependable it is . . . how it will put *your* shop ahead of the parade!

Find out about the "extras" you get with Allen equipment . . . personalized instruction . . . mechanic training . . . fast and economical service . . . merchandising helps . . . prompt after-sale service! Let us show you how the famous Allen "Dial-Chek" is providing a steady flow of work to service departments in hundreds of shops. It is to *your* advantage . . . fill out the coupon!

## TEAR OUT AND MAIL TODAY

Allen Electric & Equipment Company  
2309 North Pitcher St., Kalamazoo, Mich.

**YES!** We would like to learn about the new Allen equipment . . . and how Allen can help us increase our profits. Please arrange for **FREE DEMONSTRATION** in our shop.

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

FILLING OUT THIS COUPON DOES NOT OBLIGATE YOU IN ANY WAY . . . WE'D LIKE YOU TO KNOW ABOUT ALLEN EQUIPMENT AND SERVICES WHETHER YOU BUY OR NOT!



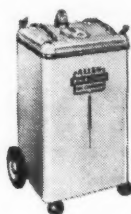
**MOTOR  
ANALYZERS**



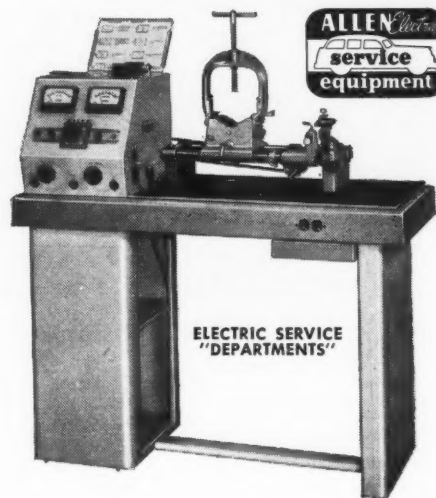
**SYNCHROGRAPH  
DISTRIBUTOR TESTERS**



**FAST BATTERY  
CHARGERS**



**3-MINUTE  
OIL CHANGERS**



**ALLEN ELECTRIC AND EQUIPMENT CO., KALAMAZOO, MICHIGAN**



# 1st OF THE PENNSYLVANIA OILS

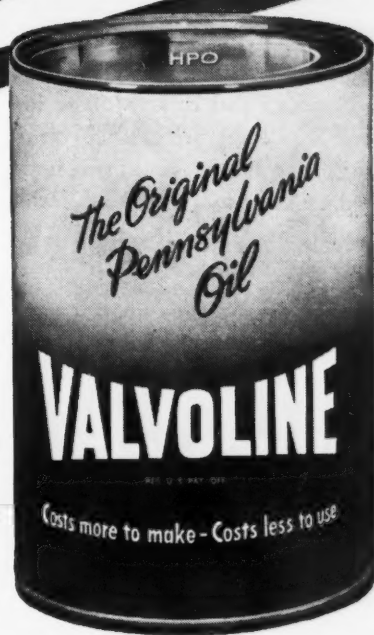
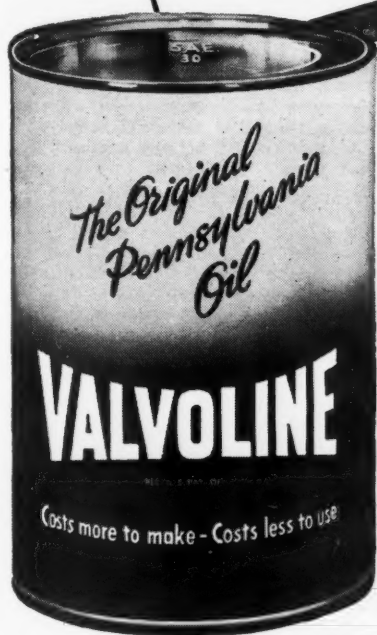
*... Meets car manufacturers' requirements  
for ALL MAKES and MODELS*

## 1 VALVOLINE PREMIUM GRADE

Recommended for most passenger cars and light commercial units for top performance and protection at low-cost-per-mile. Exceeds American Petroleum Institute requirements for Premium Grade Oil.

## 2 VALVOLINE HPO HEAVY DUTY

Especially made to meet the special requirements of a few 1950-51 model passenger cars, and for general use in motors that are given extremely hard service. Meets, or exceeds, API specifications and car manufacturers' recommendations for Heavy Duty (HD) motor oil. Look for the name "HPO" stamped on top of the can.



**BOTH**  
are Time-Tested  
VALVOLINE  
Products

# VALVOLINE

## MOTOR OIL

FREEDOM-VALVOLINE OIL COMPANY: An Affiliate of Ashland Oil & Refining Co., Freedom-Pennsylvania

BRANCHES: NEW YORK, TORONTO, PITTSBURGH, JACKSONVILLE, ATLANTA, DETROIT, CINCINNATI, CHICAGO, LOS ANGELES, SAN FRANCISCO, PORTLAND, SEATTLE, VANCOUVER, B. C.

# FREE BOOKLET

## ON CARE AND REPAIR OF PLIERS



### SIMPLE REPAIRS CAN SAVE PRECIOUS STEEL!

High quality, forged tools have built-in stamina that makes repairs worthwhile after long, hard usage.

The above free booklet, complete with simple diagrams and easy-to-follow instructions, has been prepared to make repairing easier. It is valuable to the individual pliers user; it is important to the organization with large quantities of pliers.

Single copies are available upon request and we'll be glad to furnish them in quantity for training programs or group use.

### AT UTICA, PLIERS ARE DROP FORGED FOR STRENGTH



The name **UTICA** on the pliers and adjustable wrench you use means you're working with the finest in drop forged tools. Drop forging aligns the steel fibre structure with the shape of the tool, as shown in diagram. Drop forging means *extra* strength, *extra* toughness.

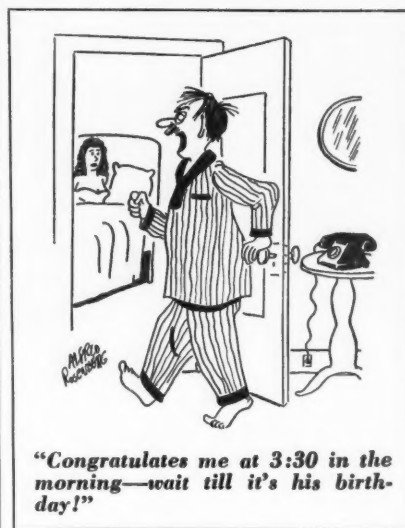
In Canada:  
Adlam Tool & Supply Co., Ltd., Montreal  
Walls-Irons, Ltd., Winnipeg



**IT PAYS TO USE QUALITY TOOLS**  
AND THE WORLD'S BEST TOOLS ARE MADE IN U.S.A.

### NADA Convention Attendance Expected to Set New Record

Latest reports indicate that the National Automobile Dealers Association 1952 Convention to be held in New York City, January 27-30, will set a new record for attendance. Present indication, it is said, are more than 12,000 new car and truck dealers and their service and sales managers will participate. Convention headquarters will be the Waldorf-Astoria Hotel, with general business sessions and clinic discussions at the 34th Street Armory, 34th Street and Park Avenue.



### 125 MPH Spanish Car To be Shown in Paris

A new passenger car, the "Pe-gaso 102," is being exhibited at the coming Paris Salon at the Grand Palais, in Paris, France. This V-8 powered Spanish car is claimed to be capable of speeds in excess of 125 miles per hour. The engine has a displacement of 2.5 litres and overhead camshafts.

The transmission provides five forward speeds and one in reverse.

Independent suspension is used at the front, with De-Dion type at the rear. Torsion bar type suspension is used throughout.

### Classified Advertisement

Manager available immediately. Formerly associated with one of largest equipment manufacturers in U. S. Has wide acquaintance in jobbing trade—Maine to Montana. (Not limited to equipment only.) Box 18, Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)

Of **CHILTON'S MOTOR AGE**, published monthly at Philadelphia 39, Pa., for October 1, 1951.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, G. C. Buzby, East Sunset Ave., Chestnut Hill, Philadelphia 18, Pa. Editor, Frank P. Tighe, 1017 Drexel Ave., Drexel Hill, Pa. Managing Editor, Charles M. Kenyon, 600 Pine St., Royersford, Pa. Business Manager, G. C. Buzby, East Sunset Ave., Chestnut Hill, Philadelphia 18, Pa.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Chilton Company, Chestnut & 56th Sts., Philadelphia 39, Pa.

Holders of more than 1% of the capital stock outstanding of Chilton Company: Mary M. Acton, 260 Sycamore Ave., Merion Station, Pa.; Mrs. Beulah Fahrendorf, 59 Drake Road, Scarsdale, New York; Dorothy S. Johnson, 1115 Fifth Avenue, New York, N. Y.; Mabel M. Musselman, 260 Sycamore Ave., Merion Station, Pa.; John Blair Moffett, 1608 Walnut St., Philadelphia, Pa.—Agent for J. Howard Pew, J. N. Pew, Jr., Mabel P. Myrin, Mary Ethel Pew; Ethel G. Breen, Trustee u-w of Charles W. Anderson, Old Greenwich, Conn.—Beneficiaries: Robert C. Anderson, Percival E. Anderson, Charles W. Anderson, Jr., Annie L. Clark; Elizabeth J. Bailey and Ellwood B. Chapman, Trustee Estate of James Artman, Deceased, 930 Real Estate Trust Building, Philadelphia, Pa.—Beneficiaries: Franklin Artman, Vera Watters, Alvin C. Artman, Elizabeth J. Artman, Marion A. Pratt, George H. Pratt, by assignment, Edwin Moll, by assignment; Frederick S. Sly, 149-40 35th Avenue, Flushing, Long Island, New York; Mabel M. Musselman, Mary M. Acton and John Blair Moffett, Trustees u-w of Clarence A. Musselman, Deceased, 1608 Walnut Street, Philadelphia, Pa.; Charlotte M. Terhune, 160 E. 48th Street, New York, New York.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state). None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

G. C. BUZBY, Publisher

Sworn to and subscribed before me this 25th day of September, 1951.

PHILIP J. SHIRE, JR.

(My commission expires January 7, 1955.)

[SEAL]



# WEEDS-WEEDS-WEEDS!

... no wonder people prefer them!

This year again dealers who offer WEED CHAINS will ride the tail wind of strong national advertising.

It will appear in millions of copies of The Saturday Evening Post, Collier's, Cosmopolitan, American Magazine, Better Homes & Gardens, American Legion and Pathfinder . . . in Country Gentleman, Farm Journal, Successful Farming, Capper's Farmer and more than 20 other great farm papers . . . also in leading motor club papers and in Commercial Car Journal, Fleet Owner, Public Safety, Transport Topics and Bus Transportation.

**Order** WEED AMERICAN V BAR-REINFORCED and WEED REGULAR TIRE CHAINS from your wholesaler without delay. Don't lose the profits from the first snow storm.

**ACCO**

York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.



**WEED  
TIRE CHAINS**



**AMERICAN CHAIN DIVISION  
AMERICAN CHAIN & CABLE**

*In Business for Your Safety*



## NEWEST, Simplest,

PAYS-FOR-ITSELF,  
AUTOMATIC CAR WASHER

Uni-Track (one track)

by the makers of the first automatic car washer



★ EASY to install . . . no engineering needed. ★ SIMPLE to operate. ★ NO compressor or special bay needed. ★ Portable.

Write TODAY ★ Distributors wanted.

**JETOMATIC, INC.**

Wakelee at Hall Place Ansonia, Conn.

## KEN-TOOL

### 4-WAY RIM WRENCHES

T-60  
Standard Passenger

T-56  
Heavy Duty Passenger

T-90  
Light Truck

T-95  
Extra Heavy Duty Truck Wrench  
With Handle For Extra Large Rims

They're built stronger to last longer... forged from only the highest quality steel... held to KEN-TOOL'S rigid standards. They're "Job Designed" to do tough jobs quicker... Best by Test!

See KEN-TOOL'S Complete Line At Your Jobber!

Largest Exclusive Manufacturers of Tire and Wheel Changing Tools

**The KEN-TOOL Mfg. Co.**  
Abrus 3-0866

## HAVE YOU A JOB FOR A TRAINED MECHANIC?

We have a number of alert young men who have completed intensive training in Automotive Mechanics, Automatic Transmissions and Body-Fender Rebuilding. They learned their trades thoroughly by working on actual equipment under personal, expert supervision. If you need a trained man, we invite you to write for an outline of our course, and for a prospectus of the graduate. No fees, of course. Address:

Placement Manager, Dept. P102-11

**COMMERCIAL TRADES INSTITUTE**  
1400 GREENLEAF CHICAGO 26

## Calendar of Coming Events

Nov. 26-27—Arizona Automobile Dealers Assn., Reno Motor Car Dealers Assn., joint session, Las Vegas, Nevada.

Nov. 26-28—Automotive Trade Assn. of Virginia, John Marshall Hotel, Richmond, Va.

Nov. 27-29—Annual convention of National Used Car Dealers Assn., Hotel Tampa Terrace, Tampa Fla.

Dec. 3—Annual Convention of Oregon Auto Dealers Assn. Multnomah Hotel, Portland.

Dec. 3-5—Annual Convention, Motor & Equipment Wholesalers Assn., Stevens Hotel, Chicago.

Dec. 6—Annual convention, Utah Automobile Dealers Assn., Newhouse Hotel, Salt Lake City.

Dec. 7-8—Annual Convention Montana Automobile Dealers Assn., Placer Hotel, Helena, Montana.

Dec. 14—Annual meeting of Portland Auto Dealers Assn., Multnomah Hotel, Portland, Oregon.

1952

Jan. 27-30—NADA Convention, Waldorf-Astoria Hotel, New York City.

Jan. 27-30—11th annual convention Truck Trailer Mfg. Assn., Hotel Shamrock, Houston, Tex.

Feb. 16-24—44th Annual Chicago Auto Show, International Amphitheatre, Chicago.

Feb. 22-Mar. 1—Washington Automotive Trade Assn., National Guard Armory, Washington, D. C.

Feb. 28-Mar. 2—Pacific Automotive Show, Pan Pacific Auditorium, Los Angeles.

Feb. 29-Mar. 6—Kansas City Auto Show, sponsored by Motor Car Dealers Assn. of Greater Kansas, Municipal Auditorium, Kansas City.

Mar. 20-23—10th Annual Southwest Automotive Show, Sam Houston Coliseum, Houston, Texas.

Mar. 29-Apr. 6—Seattle Auto Show, sponsored by Seattle Automobile Dealers Assn., Field Artillery Armory, Seattle.

Apr. 7-8—13th Annual Convention, Missouri Automobile Dealers Assn., Muehlebach Hotel, Kansas City, Mo.

May 16-17—Southwest Automotive Show Conference, Asheville, N. C.

OKEY, YOU STOP  
...YOU'VE GOT  
**SOUTHERN FIBER BLOCK**



**SOUTHERN**  
FRICTION MATERIALS CO. CHARLOTTE 1, N.C.

## RAMCO PISTON STABILIZERS

permanent piston restoration calls for an

**INSIDE JOB!**



Genuine  
**SERVICE**  
INDIANAPOLIS  
"Measurably Better"  
**SPRINGS**

**SERVICE SPRING COMPANY**

INDIANAPOLIS 6, INDIANA

WOLF'S HEAD  
IS 3 STEPS AHEAD  
**WOLF'S HEAD**  
MOTOR OIL AND LUBES  
100% PURE PENNSYLVANIA  
Member,  
Penn. Crude Oil  
Association

**JIBO** WHEEL ALIGNMENT  
CAMBER TOOL—FITS  
ALL CARS—NEW OR OLD

Mfg. under patent rights. Money back guarantee if not satisfied.

J-O-10 Increasing camber complete with J-O-13 Jaw \$24.00  
J-O-13 Jaw for lighter spindles .....\$12.00  
J-O-14 Decreasing att. \$12.50

CASTOR SHIMS—5 degrees or thickness  
AXLE SHIMS—1½ to 4" in all degrees  
COIL SPRING SPACERS—top or bottom, contour or flat, for all cars

Ask your jobber or write direct  
**JIBO TOOL CO., 507 Bittling Bldg., Wichita, Kan.**

## OVERSIZE

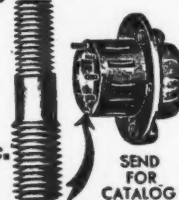
**REAR WHEEL STUDS** for all Trucks

Order from Your Jobber



**CHAMP-ITEMS, Inc.**

6191 Maple Ave.  
St. Louis 14, Mo.



SEND FOR CATALOG

# DELCO

## THE NATION'S

# NO. 1 BATTERY



**DELCO**—and only **DELCO**—gives you these four great advantages

### THE NO. 1 NEW-CAR BATTERY!

More Delco batteries are installed as original equipment in new passenger cars than any other make.

### THE LEADING NEW-TRUCK BATTERY!

Truck manufacturers insist on batteries that are dependable and durable. That's why Delco batteries are installed in more new trucks than any other make.

### THE BATTERY ENGINEERS PREFER!

No one knows batteries like automotive engineers, and they prefer Delco . . . to any other make in America today.

### THE NO. 1 REPLACEMENT BATTERY!

Delco batteries are the choice of millions of car owners. For reliable starting power . . . for long life . . . America knows that Delco's the buy.

## DELCO BATTERIES—A UNITED MOTORS LINE

Available Everywhere Through



United Motors Distributors



## Superior Design tells the story

Your customers know a good thing when they see it. And they'll quickly see the extra value in Aero-Seal Hose Clamps. Aero-Seal superiority shows in its design.

Worm drive gives uniform clamping pressure — no chance of leakage. Self-locking feature proof against vibration. Extra long take-up reduces number of sizes and inventory required. Screwdriver and thumb-grip types.



Worm Drive  
Never Works  
Loose



## "Aero-Seal" HOSE CLAMPS

- Stainless Steel Bands
- Easy to install
- Use again and again
- Will not loosen
- Costs a little more  
... pays you a lot more profit.

**BREEZE CORPORATIONS, INC.**

40 South Sixth St., Newark 7, N. J.



## "NATIONAL" DOES IT AGAIN

**NOW! A Disappearing Tube—  
Concealed Overhead Unit  
to Get Rid of Gas Fumes**

What you have been waiting for—the final, successful solution to your garage ventilating problem—all available in a packaged kit, including motor and blower, ready to install.

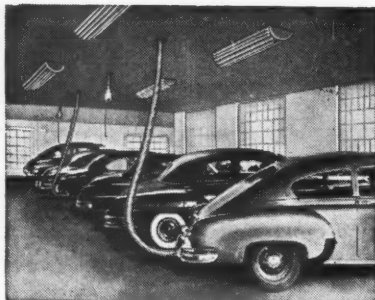
- Makes More Head Room
- Handsome—Blends Into Architecture
- Tubes Concealed When Not in Use

Standard Kit — 2 In-  
lets serving any two  
of 4 cars in a row.

**\$284<sup>50</sup>**

F.O.B. Decatur.

Additional car  
service inlets  
\$64.55 each.



National also makes complete packaged kits for underfloor installations starting at \$351.50. Flexible metal hose, motor and blower units, rustproof cast aluminum floor assemblies and accessories are also available. Discuss your carbon monoxide problem with National's nearby representative—No obligation. Write today.

Architects and Builders please refer to Sweet's Catalog.

### THE NATIONAL SYSTEM OF GARAGE VENTILATION

World's Largest Manufacturer of Exclusive Garage Ventilating Equipment

Dept. 3-K, 318-330 N. Church St., Decatur, Illinois

## MOTOR AGE

### Subscription

### Renewal Percentage

Is Higher Than

That of Any Other

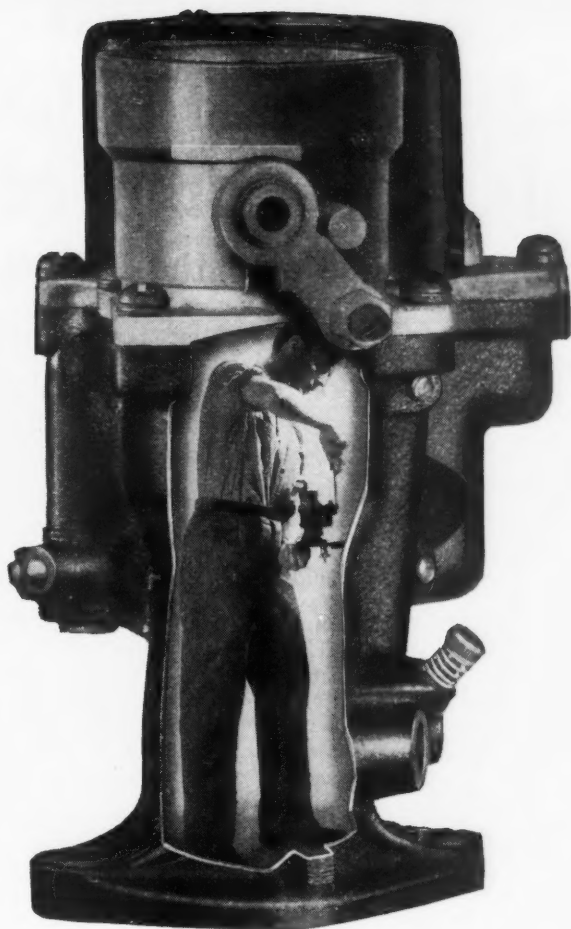
MONTHLY

AUTOMOTIVE

SERVICE

MAGAZINE





# He's making money in there!

Look what happens to you when you take on the Hygrade Fingertip System of Carburetor Rebuilding:

A complete sales promotion program in your locality builds you up as "the shop that knows carburetors inside out".

Ads in Popular Science and Popular Mechanics mean that one out of 6 car-conscious men will be looking for your shop — the Hygrade System Shop.

You get everything you need to rebuild all carburetor makes, right in your own shop: the famous Hygrade Manual, tools, instruments, kits.

These Hygrade-System Shops say:

*"... it pays to know carburetors inside-out"*



*"The Hygrade System does just what the advertising says" reports H. C. Wilson, San Bernardino, California*



*"It's a good business builder because I save customer's time" writes Julius Ferran from Coyote, New Mexico*



*"Carburetor jobs up 60%; bench time down 50%," says Al Gross, Al's Repair Shop, Philadelphia, Pa.*



*"It boosts my reputation because one customer tells another" reports Bill Picone, Houma, La.*

## It's easy to become an expert:

With the revolutionary Hygrade System, you'll be able to rebuild a carburetor the first time you try, and after 5 or 6 jobs, you'll be expert at it.

Interested? Just write "FINGERTIPS" on your letterhead, billhead or business card and mail to: HYGRADE, 37-18 Northern Boulevard, Long Island City 1, New York.

# HYGRADE FINGERTIP SYSTEM OF CARBURETOR REBUILDING

*by the makers of Blue Streak Ignition Products*

**SAVES TIME!**

**SAVES MONEY!**

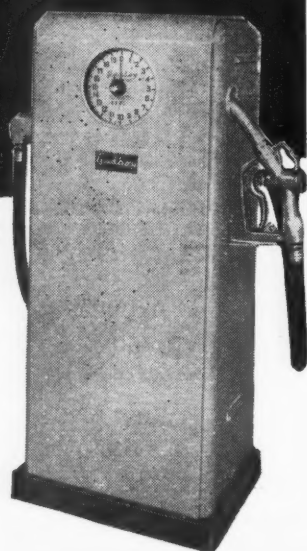
**SAVES LABOR!**

**Gasboy**  
CONSUMER  
ELECTRIC PUMPS

UNDERWRITERS APPROVED

**The 10 GPM Series 15 Gasboy**

A spectacular low-priced consumer electric pump combining all the beauty and convenience of high-priced commercial types. This newest of Gasboy electrics is perfectly suited where pump speeds of 10 GPM are ample.



SEND FOR  
COMPLETE INFORMATION  
AND PRICES

MODEL 1550

**WM. M. WILSON'S SONS, INC.**

MANUFACTURERS OF GASBOYS, KERO-BOYS, OILBOYS, ROTABOYS  
GENERAL OFFICES AND PLANT AT LANSDALE, PA.



CALL THE JOBBER  
WHO SELLS

**US  
AXLES!**

You can get replacement Axle Shafts for early model or late model cars, trucks or buses. Why waste time, simply call the jobber who sells U S AXLES. He carries a complete stock.

**THE U. S. AXLE COMPANY Inc.**  
POTTSTOWN, PA.



**NO AMERICAN  
SERVICE STATION  
is fully equipped  
without this essential MANUAL**

**SERVICING  
GUIDE**  
to British Motor Vehicles

**Complete maintenance & repair  
data for 52 British cars, trucks and tractors**

If you overhaul only *one* British automobile . . . this amazing book will pay for itself! Compiled after years of research among leading British automotive manufacturers, it gives the kind of information that will enable you to service almost any British automobile, truck or tractor. Large (11½" x 8½"), durable, and easy to use, it is a *Must* for garage operators.

**\$10** a copy

Order from:  
**BRITISH PUBLICATIONS INC.,**  
30 East 60th Street, NEW YORK 22, N.Y.

**REMARKABLE AUXILIARY LUBRICATION  
SYSTEM FOR TOP CYLINDER AREA FOR  
POWER-PLUS PERFORMANCE FOR ALL  
INTERNAL COMBUSTION ENGINES**

**Engineered  
AUXILIARY  
LUBRICATION**

- Reduces Valve and Ring Failures
- Removes Combustion Residues
- Lowers Fuel Octane Requirements
- Saves Gasoline and Oil
- Controls Engine Deposits
- Decreases Engine Wear
- Increases Payload Power

**Ampco**  
VAPOR  
LUBRICATOR

Available through  
**Better Car and Truck  
Dealers Everywhere**

Product of  
**AUTOMOTIVE & MARINE PRODUCTS CORP.,**  
BOSTON 34, MASS.



**FOR THE LIFE OF AN ENGINE . . .  
AMP CO VAPOR-SPRAY LUBRICATION**

Patents Applied  
for and Pending

**The Engineered Method of  
Auxiliary Lubrication for the  
Modern, High-Compression Engine.**

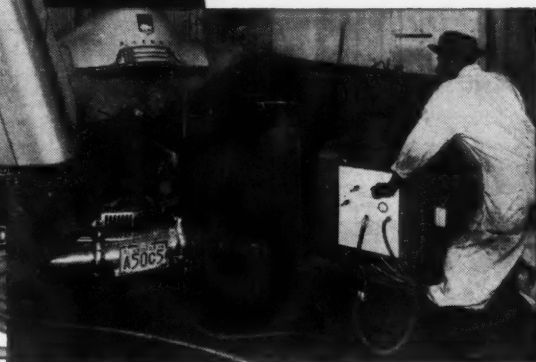
• For Economy  
• For **BIGGER** Profits

... Get the **ONE**  
that's really **TWO**

Combination  
**HYPRESSURE**  
**Jenny**  
and  
**STEAM THORO-PURGE**



Cleaning Motor Block



Reverse Flushing Cooling System

**The only STEAM CLEANER  
and COOLING SYSTEM FLUSER  
in ONE Compact Unit**

FOR ECONOMY, it's smart business to get Hypressure Jenny Combination—the full-powered steam cleaner with “built-in” Steam Thoro-Purge—world's only two-in-one steam cleaner and cooling system fluser.

FOR BIGGER PROFITS, Hypressure Jenny Combination produces more profit per square foot of floor space than any other shop equipment. You can steam clean car motors at \$3 to \$5 per job; prepare chassis for undercoating; strip muck and grease from springs, steering knuckles, under fenders; clean white sidewall tires, and do

scores of other lucrative jobs!

At an average of \$9 per job, including replacement parts, you can clean complete cooling systems—radiator, engine block and heater—right on the car. And Steam Thoro-Purge's exclusive 4-way action of heat, chemical, sudden temperature changes and strong blast, does it more thoroughly and quickly than it can be done by any other method.

Write today for free booklet, and complete information. There is no obligation.

Distributors in all parts of the world. For local representative see Classified Telephone Directory.

**HYPRESSURE JENNY DIVISION**

**HOMESTEAD VALVE MANUFACTURING COMPANY**

P. O. Box 95

*Sewing since 1892*

CORAOPOLIS, PA.



## Why Clean Metal Parts the HARD WAY?



Use **METALclene**

**NO BRUSHING  
NO SCRAPING  
NO HEATING**

Metalclene is made under an exclusive Bendix formula. There are many copies, but there is no substitute. When you order, be sure to specify and get the original Bendix\* Metalclene.

\*REG. U.S. PAT. OFF.

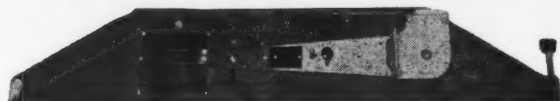
*Just Dip 'em in Dirty - Pull 'em out Clean*

**BENDIX PRODUCTS DIVISION of**  
SOUTH BEND 20, INDIANA



Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

## Super-Easy CAMBER-CASTER GAGE



Handiest camber-caster gage ever invented. Does the job in one-third the time. Also makes K.P.I. tests. The only gage with a built-in floor slope compensator. Once the gage is set to the floor slope, the slope is automatically compensated for in all readings.

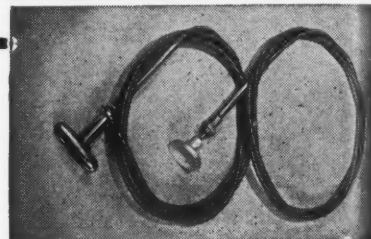
**Micro-Linor Service**

1017 Dime Bldg.

Detroit 26, Mich.

**Write for  
Literature**

## Universal Hood Controls



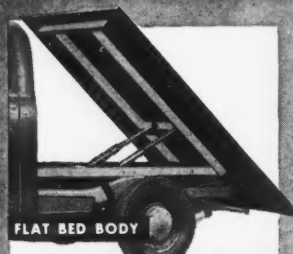
for practically all makes of cars. Quality products with exclusive engineering features and trouble-free service. Easy to install. Easy to sell. Contact your local jobber or write for full information.

Also Mfrs. of Revolutionary Aldo Conversion Kits

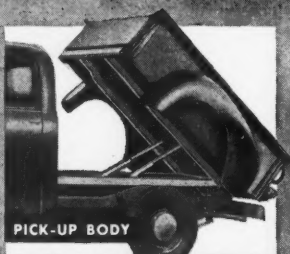
**SUPERIOR SCREW & MFG. CO., INC.**  
1227 W. Henderson Chicago, Illinois

# Outfront

- IN DEMAND
- IN SALES
- IN PROFITS



FLAT BED BODY



PICK-UP BODY

## CONVERTO *picUPac* HOISTS

Cash in on extra profits by selling the Converto picUPac Hoist, designed for quick installation on any pick-up truck or flat bed body. Converts ordinary vehicles into serving hundreds of uses. The picUPac stands up under the toughest hauling and dumping operations. Comes equipped with electrically driven or manually operated Blackhawk Pump. Here's a unit your customers need. Ask your distributor for complete information.



WRITE FOR FREE FOLDER

# Converto

MANUFACTURING CO.

CAMBRIDGE CITY, IND.

## "Also in the purchase of new equipment and tools

## MOTOR AGE

has been a big help, as we know practically all of the most reliable manufacturers are represented in Motor Age. We can keep well posted on their products and be in a position to make the best buys in this way."

The above, of course, is taken from a letter written to us by a MOTOR AGE subscriber. He is typical of thousands of other Motor Age subscribers in that he uses this leading automotive service magazine as a buying guide.

## MOTOR AGE

A CHILTON publication



Chestnut and 56th Sts. Philadelphia 39, Pa.



## ANOTHER AUTOMATIC PRODUCT SOLD BY YOUR AUTOMOTIVE JOBBER

*Unexcelled  
in Quality and  
Performance*

All Linmar Water Pumps are factory duplicates of original equipment and all parts are interchangeable with those supplied by the car manufacturers. The unexcelled service record of Linmar Water Pumps in the field has been made possible by the use of the finest new materials obtainable, precision manufacture and exacting inspection and tests.

<b>TOLERANCES</b>	Manufacturing limits as low as .0002" are maintained on critical operations.
<b>BEARINGS</b>	Equipped with nationally known and advertised bearings, lubricated for life.
<b>SEALS</b>	Bellows type, made of synthetic rubber impervious to oil and reinforced to prevent cracking.
<b>SHAFTS</b>	Equipped with long wearing, precision manufactured shafts.
<b>FITTINGS</b>	Factory installed with special water repellent lubricants injected into the pumps during assembly.
<b>BACK PLATES</b>	Installed on all those pumps designed to require this part.
<b>GASKETS</b>	All necessary gaskets of the highest quality obtainable.
<b>FINISH AND PACKING</b>	All Linmar Pumps are specially treated for rust prevention. They are sturdily packaged and attractively labeled with the manufacturers part and the year and model of the car they fit.
<b>GUARANTEE</b>	All Linmar Water Pumps are fully guaranteed against defects in material and workmanship and for exact fit on the car designated. Write for Catalog L-4



**Linmar Division**      **AUTOMATIC STEEL PRODUCTS, INC. • CANTON 6, OHIO**

**A Substantial Supplier to the Automotive Industry for Over 20 Years**

AUTOMOBILE JACKS • AUTOMOTIVE GRINDING WHEELS • ONE-END LIFTS • MERCURY CLUTCHES

## "JOURNALIZE"

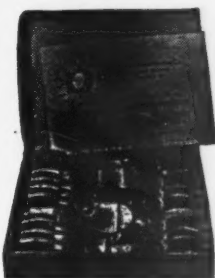


ALL of the crankpins can be trued with Journalizers on any make car or truck without removing the crankshaft, cylinder head, knee action, axle, steering, oil lines, counterweights or engine supports. Simply remove the oil pan and spark plugs, install Journalizer in place of engine bearing and the starter motor does the work. Tool is supplied with coarse and fine replaceable inserts for rough cutting and polishing.



**FOR  
FAST, ACCURATE,  
ECONOMICAL  
CRANKSHAFT  
TRUING**

No special skill is required to HONE journals to a smooth round finish to give lasting bearing performance.



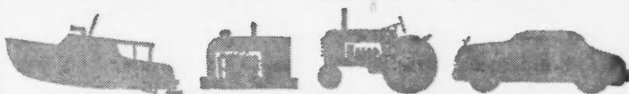
Journalizer will true No. 1 journal on ALL engines. "Universal Kit" of five sizes service passenger cars and most trucks (excepting Ford V8) ..... \$35.00 For individual kits (\$7.00 each) specify engine and model when ordering.

**POSTMA MANUFACTURING CO.**

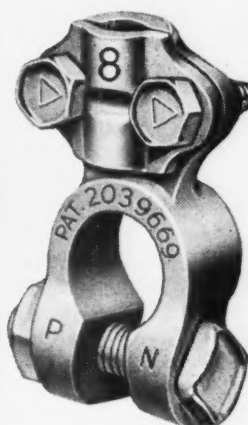
691 East 18th Street  
Paterson, New Jersey

62 61st Place  
Long Beach, Calif.

**10,000,000 USERS PROVE...**



**TRIPLE-A NO. 8 TERMINALS  
ARE 8 WAYS BETTER!**



1. Entire terminal made of solid brass for greater conductivity, fully plated to prevent corrosion.
2. Truly universal . . . holds #00 to #4 cable or flat strap tightly and permanently.
3. Double screw pressure and built-in S clamp for full permanent electrical contact.
4. Removable top plate makes terminal easy to attach and remove.
5. Top plate reverses to hold as small as 22 gauge wire in emergencies.
6. Fits positive and negative posts.
7. Straight-in-line design for more universal re-use of shortened cables.
8. Square bolt head positively held by deep "V-lock". Stays in place, will not turn.

All Triple-A No. 8 battery terminals are packed 10 to a card. This free, colorful, sales appealing card provides both sales stimulus and easy access.



**Triple-A**

**SPECIALTY COMPANY**

2101 WEST WALNUT STREET • CHICAGO 12, ILLINOIS  
TELEPHONE SEELEY 3-0466 • CABLE "TRIACO"

# Index to Advertisers

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.



AC Spark Plug Div.....24-25  
Accurate Parts Mfg. Co. .... 110  
Air Reduction Sales Co. .... 130  
Airtex Automotive Div..... 114  
Allen Electric & Equip. Co... 152  
Aluminum Co. of America... 129  
American Brakeblok Div..... 127  
American Chain & Cable Co.. 155  
Anderson Co., The..... 136  
Armstrong-Victor ..... 93  
Aro Equipment Corp..... 19  
Automatic Steel Products,  
Inc. .... 163  
Automotive & Marine Products  
Corp. .... 160  
Autopulse Corp. .... 134

Bean Division, John..... 139  
Bendix Products Div..... 162  
Black & Decker Mfg. Co..... 95  
Blackhawk Mfg. Co. .... 14  
Bonney Forge & Tool Works.. 111  
Borg-Warner Corp. .... 113  
Bowes Seal Fast Corp..... 99  
Breeze Corporations, Inc.... 158  
British Publications, Inc..... 160  
Buckingham Mfg. Co., Inc.... 165  
Burd Piston Ring Co..... 80

Carter Carburetor Corpora-  
tion ..... 98  
Central Tool Company, The.. 132  
Champ-Items, Inc. .... 156  
Champion Laboratories, Inc.. 128  
Chevrolet Motor Div..... 125  
Chrysler Corp. .... 90  
Chrysler Motors Parts Corp.. 10  
Classified Advertisement .... 154  
Commercial Credit Corp..... 133  
Commercial Trades Institute.. 156  
Converto Mfg. Co..... 162  
Country Gentleman ..... 149  
Crescent Company, Inc., The.. 20  
Curtis Pneumatic Machinery  
Div. .... 75

Delco-Remy Div. General Mo-  
tors Corp. .... 7  
De Vilbiss Company, The .... 123  
Ditzler Color Div..... 105  
Doan Mfg. Corp..... 106  
Dura-Bond Bearing Co..... 74

Echlin Mfg. Co..... 84  
Edelmann & Company, E.... 102  
Eis Automotive Corp..... 124  
Electric Auto-Lite Co., The  
22-23-61  
Ethyl Corporation ..... 11

Farm Journal ..... 79  
Federal-Mogul Service ..... 6-86  
Federated Metals Div..... 4  
Fitzgerald Mfg. Company, The 97  
Ford Div. Ford Motor Co.... 109  
Fox Products Company..... 126  
Freedom-Valvoline Oil Co.... 153

General Electric Co.....12-165  
General Motors Corp..... 107  
Globe Hoist Co..... 140  
Grey-Rock Div. Raybestos-  
Manhattan, Inc. .... 15  
Grizzly Mfg. Co..... 137

Harrison Radiator Div..... 13  
Hastings Mfg. Co.....2nd Cover  
Hein-Werner Corp. .... 73  
Heller Brothers Co..... 87  
Henderize Inc. .... 150  
Herbrand Tools ..... 112  
Hollingshead Corp., R. M.... 9  
Homestead Valve Mfg. Co.... 161  
Hygrade Products Div..... 159

Jetomatic, Inc. .... 156  
Jibo Tool Co..... 156  
Johns-Manville Corp. ....30-31

K-D Tools ..... 147  
Kelsey-Hayes Wheel Co. .... 131  
Ken Tool Mfg. Co., The..... 156  
Kester Solder Co..... 116  
King Electric Equipment Co.. 92

Lincoln Electric Co., The.... 108  
Linmar Div. Automatic Steel  
Prod., Inc. .... 163  
Lion Oil Company..... 121

McKay Company ..... 151  
McQuay-Norris Mfg. Co.....88-89  
Maremont Automotive Prod-  
ucts, Inc. .... 85  
Micro-Linor Service ..... 162  
Monroe Auto Equipment Co.. 166  
Moog Piston Ring Co..... 5  
Moraine Products Div.....103-148  
Motorola, Inc. .... 138

National Air Sander, Inc.... 104  
National Motor Bearing Co.,  
Inc. .... 119

National System of Garage  
Ventilation ..... 158  
Neapco Products, Inc..... 78

Owens-Corning Fiberglas  
Corp. .... 144

Pedrick Piston Ring Div..... 8  
Perfect Circle Corp..... 59  
Perfection Gear Co..... 91  
Permatex Co., Inc..... 1  
Pick Mfg. Co..... 120  
Postma Mfg. Co..... 163  
Pure Oil Company..... 71  
Purolator Products, Inc..... 83

Ramsey Corporation.156-3rd Cover  
Rankin Mfg. Co..... 117  
Rinshed-Mason Co. .... 142

Saturday Evening Post..... 18  
Sealed Power Corp.....32-69  
Service Spring Co..... 156  
Sherwin-Williams Co. .... 135  
Simonds Abrasive Co..... 76  
Skillsaw, Inc. ....100-101  
Snap-on Tools Corp..... 81  
Socony-Vacuum Oil Co..... 21  
Southern Friction Materials  
Co. .... 156  
Standard-Thomson Corp. .... 122  
Storm-Vulcan, Inc. .... 118  
Studebaker Corp. .... 57  
Sun Oil Co..... 77  
Sunnens Products Co..... 143  
Superior Screw & Mfg. Co.,  
Inc. .... 162

Texas Company, The..... 2  
Thermoid Company

115-Back Cover  
Timken Roller Bearing Co.,  
The ..... 29  
Tone Mfg. Co..... 94  
Triple-A Specialty Co..... 163

U. S. Axle Company, Inc.... 160  
United Motors Service....146-157  
Upholstery Leather Group,  
The ..... 28  
Utica Drop Forge & Tool  
Corp. .... 154

Victor Mfg. & Gasket Co.... 93

Wagner Electric Corp..... 26  
Weed Chains ..... 155  
Weller Electric Corp..... 82  
Wilkening Mfg. Co..... 8  
Willard Storage Battery Co..16-17  
Wilson's Sons, Inc., Wm. M.. 160  
Wiry Joe ..... 20  
Witteck Mfg. Co..... 165  
Wix Accessories Corp..... 27  
Wolf's Head Oil Refining Co.. 156  
Wood Co., Frank N..... 96

Yankee Metal Products Corp. 141

Zink Corp., The Howard.... 145



For **LEAKPROOF** Hose Connections

**WITTEK**

**AUTOMOTIVE  
HOSE CLAMPS**

### For All Automotive Replacement Uses

With a variety of sizes and types, there is a Wittek Hose Clamp for every hose connection. Easily and quickly applied or removed. See your jobber, or write for details.



**Sure-Tite Display Package**  
100 clamps for every size of radiator hose.



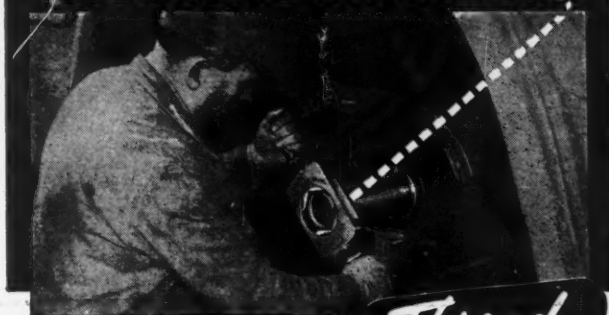
**Noc-Out Display Package**  
100 clamps in types and sizes for every application.

**WITTEK Manufacturing Co.**  
4333 W. 24th Place, Chicago 23, Illinois

Dependable Hose Connections for Over a Quarter Century



**A few turns will do it!**



**BUCKINGHAM...**

**Thread  
RESTORERS**

Just slip on, tighten and turn. That's all there is to it—it's that simple...and quick... And what results!

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads—when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from 1/4" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

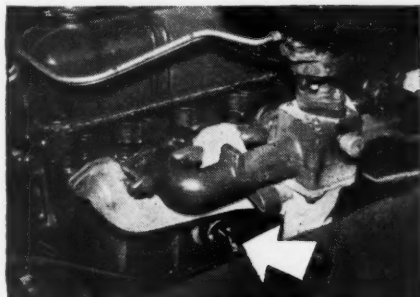
\*Short swing type.

6103 — 1/4" to 1" root diam.	\$ 6.50
6203 — 1/4" to 1" root diam.	8.50
6104 — 1" to 2 1/2" root diam.	12.00
6106 — 2" to 4" root diam.	27.50
6204 — 1" to 2 1/2" root diam.	21.00

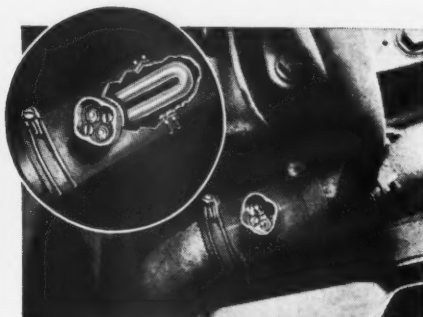
**BUCKINGHAM MANUFACTURING CO., INC.**  
59-65 Travis Street Binghamton, N. Y.

# 75,000 Sales First Time on the Market! G-E Calrod Engine Heaters Move Fast in 38 States

\*Registered trademark



Model CGE-368, for all Chevrolets, fits right between cylinder walls



Model CGE-367, for all cars except Chevrolet, Nash 600, and Studebaker Six, fits in lower radiator hose



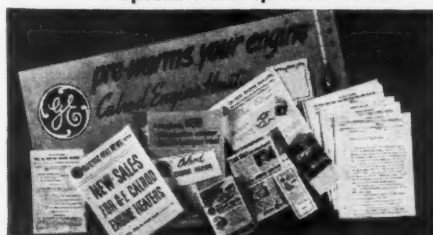
## Calrod Engine Heater

Pre-warms Car Engines for Fast Starts in Cold Weather

- Warms oil to reduce engine wear
- Lowers starting load on battery
- Speeds warm-up of car heater
- Quickly and easily installed
- Plugs into standard electric outlets
- Prevents condensation on spark plugs

**Brand new 1951 promotion will make greater sales!**

Here's what General Electric has for dealers to build Calrod engine heater sales: Big, new 12x36-inch window streamer—six-page counter handout—colorful display cartons—big ad series in Saturday Evening Post—radio spot announcements—ad mats for dealers to tie-in with other promotion!



75,000 sales without advertising! When G-E Calrod\* engine heaters were marketed in U.S. for first time last year, customers in 38 states grabbed them up—without ever hearing about them before!

And in Canada, where the heaters were originally marketed, last year's sales alone were over 100,000.

Every anti-freeze customer is a prospect for this new, fast-moving heater that pre-warms car engines for quick, easy starting even in cold weather.

Box 1441 K 674-71E  
Chicago, Ill.

☐ I'd like more information on G-E Calrod engine heaters

☐ Tell me how I can add G-E Calrod engine heaters to my present line of winter driving aids.

Name.....

Business Address.....

City..... Zone..... State.....

**GENERAL ELECTRIC**



Missing something, Mac?

"Mac" is missing the point of this service call, just as many dealers and service stations are missing the big profit angle available to them from selling the new Monro-Matic shock absorbers.

Introduction of these new wonder shocks opens up a vast new field of profit opportunities for Monroe dealers. Monro-Matics are the new, improved shock absorbers everybody is talking about—everybody wants. Selling them is made still easier by Monroe's intensive trade and consumer advertising—and, in addition, Monroe dealers are being supplied with newspaper mats, posters and sales help of every kind.

Yes, Monro-Matics can definitely mean more money for you—so get on the band wagon now. See your jobber or write the factory today.

# MONRO-MATIC

## SHOCK ABSORBERS

*The only Shocks with these Advanced Features*

Unique, 2-stage "restricted orifice" valves (on both rebound and compression) for soft, gentle control of springs on smooth roads, and quick, positive control on rough roads and at high speeds.

Compression stroke controlled by four times more fluid than formerly used in direct-acting shock absorbers.

Larger reserve fluid capacity assures constant control of compression and rebound under all driving conditions.

Pre-hardened pressure cylinder with ground and polished piston and rod... chrome-plated piston rod.

Bushings included with all Monro-Matic shock absorbers.



*Monroe Shock Absorbers are Standard Equipment on More Makes of Cars Than Any Other Brand.*

# MONROE AUTO EQUIPMENT CO.

**Monroe, Mich. — World's Largest Maker of Ride Control Products**



# Fountain of Youth

*for worn engines for 30 years!*



*Imitated but never duplicated the Stabilizing Action of the Ramco Spring Inner-Ring is the Fundamental Reason Why Ramco*

## ACTUALLY CURBS ENGINE WEAR



**RAMCO RE-POWERING\***  
Program Helps You to  
Help America Fight  
Premature Engine Wear

Use the Ramco RE-POWERING Program to show customers that oil pumping is a warning sign which, if unheeded, will result in Premature Engine Wear. Sign up for the RE-POWERING Station Sign. Get the help of this nationally advertised program to sell more piston rings, Carburetion, Ignition, and Cooling services. See your Ramco Jobber Today.

\*Nationally Advertised in



There's a bigger difference in spring inner-ring principles than meets the eye. Inner-rings may look alike but there are important differences just the same.

Ramco Inner-Rings are literally "fountains of youth in steel springs" because their primary function is to stabilize rather than to increase piston ring pressures.

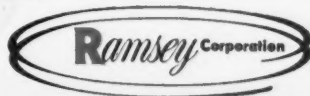
Because this is so, Ramco Inner-Rings cause no loss of horsepower, add no drag to cylinder walls, cause no excessive frictions. Thus the use of Ramco Inner-Rings actually acts to curb further wear and lengthen the performance life of the rings.

The reason is to be found in the exclusive, never duplicated design and precision manufacture of the Ramco Inner-Ring... and in its use with Ramco-designed piston rings.

Ramco Piston Rings are available from Ramco Jobbers everywhere. Their Jobber Salesmen and Counter-men will gladly give you the facts and profit—reasons why it pays to install Ramco 10-Up Rings exclusively!

**RAMCO 10<sup>up</sup> all purpose RINGS**

Right for ANY Job  
Re-Bore or Re-Ring • Car • Truck • Bus • Tractor



St. Louis 8, Missouri, A subsidiary of Thompson Products, Inc.



# Never Accept Unbranded Brake Lining

Look for this Stamp of Quality



## Did You Know?

Did you know that when heavy vehicles make fast stops, the brake lining is subjected to—

### Terrific Heat

—often as hot as molten lead—hot enough to heat a 6-room house—certainly enough to soften up the bonding agents\* in an inferior brake lining, and cause loss of friction.



### Tremendous Pressure

Each time you press the brake pedal, your foot weighs a ton—so far as the brake lining is concerned. This tremendous pressure compresses inferior brake linings to the point where they may fail in an emergency.

### High Rubbing Velocity

As the brake starts taking hold, the drum speed may be as much as 3000 feet a minute—fast enough to rub away the surface of inferior linings, causing them to wear out quickly and require frequent adjustment.

\*Thermoid bonding agents are specially compounded to withstand peak operating temperatures.

Nobody can tell good brake linings from poor—by the looks or feel.

The only way to be sure of getting dependable brake lining is to insist that it show the name of a well known manufacturer, whose products you *know* have passed the most rigorous tests.

When you buy brake lining or exchange brake shoes, look for the name "Thermoid" . . . and give your customers "the safest thing on wheels."

# Thermoid

Thermoid Company • Trenton, New Jersey

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts.

gs  
el.  
g  
st  
ll  
d-  
st  
  
or  
ne  
ur  
."